The Oil and Gas Journal

PUBLISHED WEEKLY BY THE PETROLEUM PUBLISHING COMPANY AT TULSA, OKLAHOMA

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SUBSCRIPTIONS: United States, 1 year, $6.00; 6 months, $3.00. Elsewhere, 1 year, $7.00; 6 months, $3.50. SINGLE COPIES: 20 cents. Price of any back copy more than 1 year old is 50 cents.

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THE *New* BAKER CEMENT Wash-Down WHIRLER FLOAT SHOE

Puts the "Skids" Under Ol' Man Channelling (The Bugaboo of Successful Cement Jobs)

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Cementing Efficiency Goes UP and UP to a New All Time Peak
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Fig. 1

Fig. 2

IN ADDITION to facilitating the Removal of Bridges and Washing Formation when landing casing, the New Baker Cement Wash-Down Whirler Float Shoe performs another important task - - - that of insuring best possible chance for a successful cement job - - - with minimum danger of channelling.

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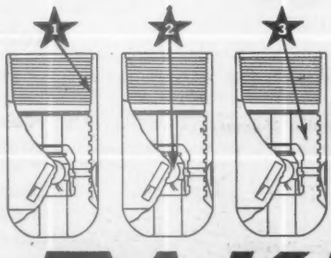

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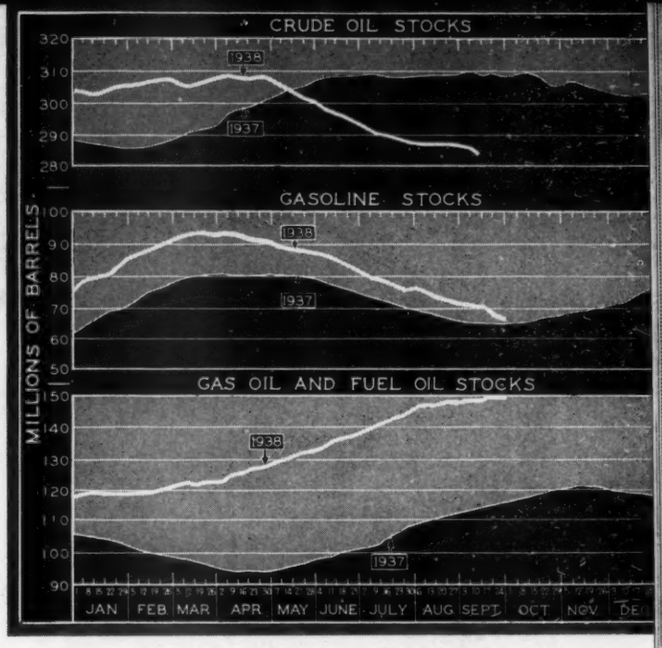
Trends

Illinois' Expanding Production Assumes National Importance


CRUDE OIL STOCKS
GASOLINE STOCKS
GAS OIL AND FUEL OIL STOCKS
MILLIONS OF BARRELS
1938
1937
JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV DEC

THE steady increase in Illinois basin production, which was accompanied on Tuesday by a reduction in posted price schedules by the largest buyer, is beginning to assume major importance in the national oil outlook. The output of that area, which includes all of Illinois, Southwest Indiana and western Kentucky, averaged approximately 97,000 barrels daily last week.

Production, which is now double that of six months ago, has been increasing rapidly in recent weeks, with no indications that this trend will change in the immediate future unless operations are voluntarily curtailed.

With more than 50 wells being completed weekly, this region has become the most active in point of drilling operations in the country. More than 300 tests are drilling and present activity can continue well into 1939 regardless of whether any new pools are discovered. None of the states concerned has a conservation act, and while many operators are endeavoring to bring about orderly development, the lack of supervision is reflected in operating practices which point to unwanted conditions later.

Under new prices posted by the largest buyer, present Illinois schedules are practically on a parity with the same grade crude in the Mid-Continent. The Illinois crudes have the advantage of being closer to the refinery markets, the savings in pipe-line transportation amounting to 25 cents or more per barrel. This advantage will tend to encourage rapid development of the Illinois area even in cases where the expansion means curtailment in other less favorably located fields. The fact that the area is traversed by three major trunk-line systems connecting to eastern refineries and that other large refining centers are within 100 to 250 miles tends to emphasize this strategic position of Illinois.

Other states—particularly Oklahoma and Kansas—which are losing former markets owing to this condition are voicing complaints which are certain to become louder if the situation becomes more critical. The attitude of outside operators is that Illinois, regardless of its favorable location and easily developed production, should do its part in the curtailment program which has been effective in several states for many months.

Some go so far as to state that further rapid expansion in the Illinois basin with its concomitant contraction in competing areas, is a threat to the stability of the entire industry east of California through the fall and winter months, a period in which national output based on available outlets should be kept around present levels.

Refinery gasolines and natural gasolines are freely offered with lower prices effective in several refining centers. The light burning-oil distillates and wax are the strongest products of the refinery list.

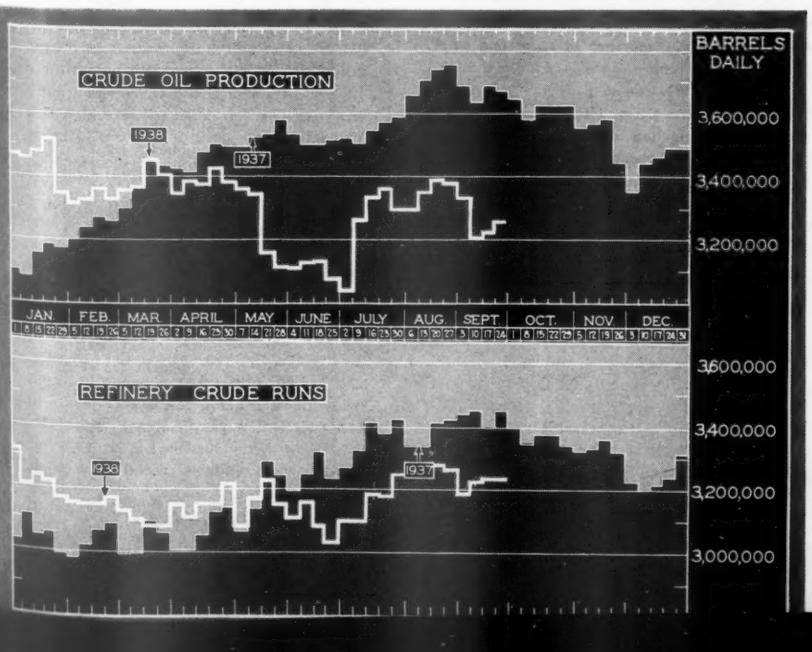
CRUDE PRODUCTION *3,254,873 barrels daily average—up 24,605. One year ago 3,667,101 barrels.*

CRUDE STOCKS *282,457,000 barrels as of September 10—down 2,462,000. One year ago—309,054,000 barrels.*

GASOLINE STOCKS *68,605,000 barrels as of September 24—down 639,000. One year ago 65,620,000 barrels.*

GAS AND FUEL OIL STOCKS *150,468,000 barrels as of September 24—up 1,080,000. One year ago 116,472,000 barrels.*

REFINERY RUNS *3,220,000 barrels daily week ending September 24—down 15,000. One year ago 3,455,000 barrels.*



DAILY AVERAGE PRODUCTION FOR WEEK

	Sept. 24, 1938	Bur. Mines Sept. est.	Sept. State allowables	Sept. 17, 1938
Oklahoma City	92,125	.....	.....	105,250
Fitts	36,975	.....	.....	38,300
Remainder of state	319,175	.....	.....	303,225
Total Oklahoma	448,275	528,300	428,000	446,775
East Texas	369,000	.....	.....	368,498
West Texas	188,650	.....	.....	187,597
North Central Texas	99,449	.....	.....	98,400
Texas Panhandle	67,350	.....	.....	64,149
East Central Texas	89,400	.....	.....	90,050
Gulf Coast Texas	316,248	.....	.....	312,750
Southwest Texas	94,350	.....	.....	93,250
Total Texas	1,224,447	1,398,600	1,233,248	1,214,694
North Louisiana	75,890	.....	.....	75,630
Gulf Coast Louisiana	189,500	.....	.....	190,900
Total Louisiana	265,390	255,300	260,260	266,530
California	677,150	638,300	610,000	678,400
Kansas	161,125	168,000	165,000	167,050
Arkansas	62,900	53,700	.....	51,890
Illinois	87,992	49,000	.....	78,751
Michigan	53,814	57,000	.....	53,968
Eastern fields	94,000	100,300	.....	95,150
New Mexico	106,000	111,600	106,000	105,930
Rocky Mountain area	73,780	84,200	.....	71,130
Total United States	3,254,873	3,444,300	.....	3,230,268

TAX HUNTERS—*Congressman Robert L. Doughton, chairman of House Ways and Means Committee . . . .*

Washington
Clashing on

By HENRY D. RALPH

WASHINGTON, D. C., Sept. 26.—The old problem of overlapping taxation by the federal and state Governments is receiving increasing attention in Washington and the prospect grows something will be done about it.

The pressing need of both states and Government for increased revenues to meet present day demands for expenditures and services of all kinds is causing tax authorities to reach out into new fields to an extent which is beginning to be of real concern to students of government, and the competition between state and federal tax collectors to tap the same revenue sources is creating a situation which all agree must be faced sooner or later.

With some 40 state legislatures meeting next January at the same time that Congress is engaged in framing a new revenue law, the problem of overlapping taxation may become acute. For years President Roosevelt and his predecessors have suggested the desirability of a conference of state and federal tax authorities to work out an agreement dividing the tax fields among them, and a number of non-governmental organizations have also been working toward this end, but nothing has been accomplished to date.

What may bring the situation to a head in the near future is the evident determination of the Treasury Department to proceed with plans to extend the federal income tax to the salaries of state employes and to the income from the securities of states and their political subdivisions, and in return permitting states with income taxes to apply them to federal employes and federal securities. While this proposal will not in itself clarify the present confusion regarding proper tax sources for states and the federal Government, it may be the means of bringing about a conference of tax authorities which could serve as the machinery for working out such a separation of tax fields.

A new federal income tax law in 1939 is imperative, since the budget is still in the red and the deficit continues to mount. Tax experts of the Treasury Department and the joint congressional committee on internal revenue are at work studying all possible sources of increased revenue. Whether the Treasury will make specific proposals for new taxes or will let Congress take the initiative, the Treasury experts will be prepared with data on estimated yields and administrative features of almost any sort of tax that may be proposed.

A general sales tax may come up for discussion, and this would be a direct invasion of a field heretofore considered a state prerogative, and experts doubt that Congress will be ready to enact such a tax for this reason. The huge revenue possibilities in the sales tax, however, will make such a move a constant threat as long as the federal deficit continues to mount, and there are increasing suggestions that the federal Government should take over the sales tax field from the states entirely, imposing a tax on all commodities and rebating a portion of it to the states in which it is collected. Advantages cited for this proposal are simplification of administration and elimination of a loophole in the state taxes occasioned by the sales in interstate commerce.

Such a possibility was envisioned last week at the convention of the National Petroleum Association by L. H. Parker, until recently chief expert of the joint congressional committee. He declared that an agreement between states and the federal Government reserving certain fields of taxation to each will be imperative sooner or later and that when this comes about it may very well include a general sales tax collected by the federal Government and rebated in part to the states.

While the states naturally look with great concern on the possibility that the federal Government may enter the sales tax field, some federal officials feel the states should stay out of the income tax field, and the proposal has been made in some quarters that those states having income taxes should be asked to abandon them in return for the allocation of a certain percentage of an expanded federal income tax. Practical difficulties of agreeing on a basis of allocation are admittedly great because incomes are not necessarily earned in the jurisdictions where they are paid.

The federal Government is already in the sales tax field to the extent that it imposes excise taxes on gasoline, lubricating oils, tobacco, and many other selected commodities, and in many cases these overlap state taxes. The tobacco tax was originally the field of the federal Government, whereas the federal gasoline tax is an encroachment on state prerogatives.

The federal gasoline tax, with other important federal excises, will terminate June 30 unless extended as has been done since it was imposed in 1932. Both Treasury officials and members of Congress think it would be wise from a theoretical standpoint for the Government to retreat from the field of manufacturers' excise taxes, except possibly on tobacco and liquor, but the pressing need for every cent of revenue and the high yield of these excises compared with the expense of collection probably will work next year, for a further temporary extension. The gasoline tax alone brings us $200,000,000 annually, and the other "temporary" manufacturers' excise taxes about the same amount.

Dr. Roswell McGill, retiring undersecretary of the Treasury, has long advocated a thorough revision of the entire federal tax structure.

The bitter political wrangle over undistributed corporation profits taxes is bound to arise again, since last year's law provided that what is left of this tax will expire next year, so the question will come up whether the administra-

What About Taxes?

The disparity of the past several years between federal income and expenditures which has widened in recent months assures that new sources of tax revenue will be tapped in the coming session of Congress. How this additional money will be raised is of special concern to the oil business, already the country's largest taxpayer.

The overlapping of federal taxation into fields formerly reserved to the states is the most important problem brought to the attention of state governors who are holding their annual conference in Tulsa this week. The governmental heads of the states realize there is danger that this federal encroachment will be extended next year.

The Washington representative of The Oil and Gas Journal made a special investigation of this and other pending tax matters through interviews with those who are charged with the responsibility of raising additional federal revenue. His findings indicating the probable trend in taxation are summarized in this article.

...and States ...n Taxation

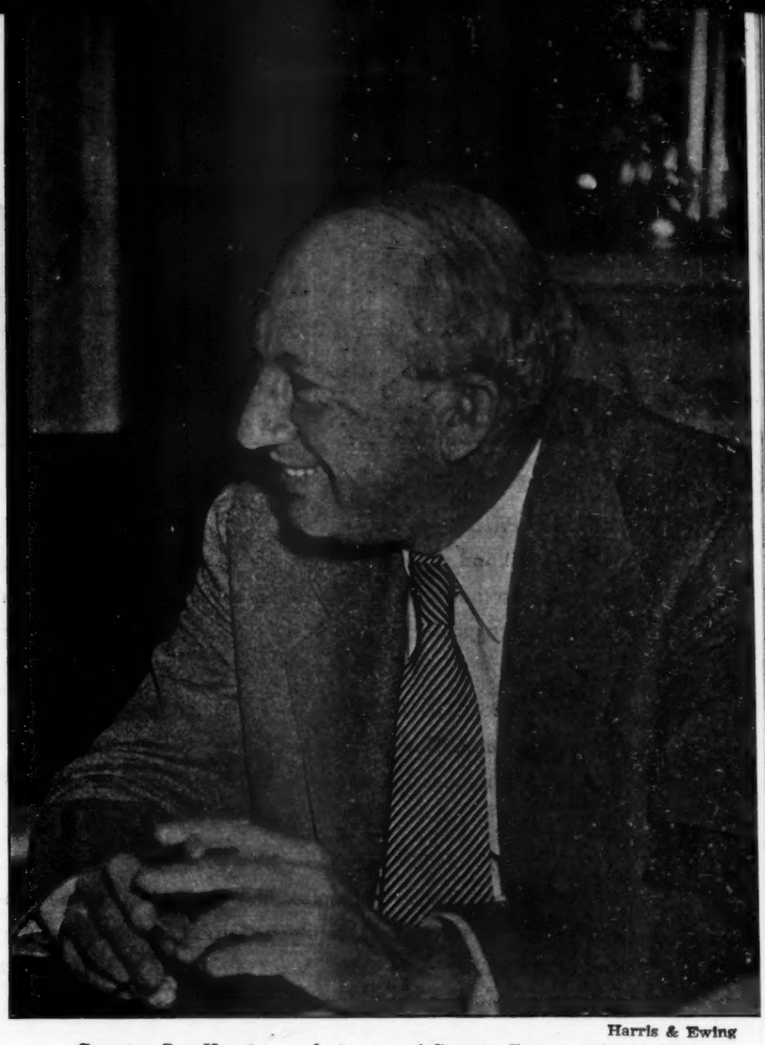
tion continues its fight for the principle of this tax. Herman Oliphant, general counsel of the Treasury Department, credited with the authorship of the undistributed profits tax, is said to be still firm in his belief in the economic soundness of the idea, although his views may be offset in large measure by the opinions of John W. Hanes, former business man recently named assistant secretary of the Treasury. Mr. Oliphant is devoting much of his time to the monopoly studies of the Temporary National Economic Committee, of which he is a member, and may propose that federal revenue laws be made a means of monopoly control and that taxes be revised to favor small business units and prevent the growth of large corporations.

The term "incentive taxation" is being heard, meaning a system of taxes which deliberately encourages reemployment, increased wage payments, new construction, and other business improvement.

There is no indication of the administration's attitude toward incentive taxation, but the Treasury's attorneys and the experts of the Bureau of Internal Revenue are making a close study of it should Congress request information. An example is the study by a special committee of the Senate of profit sharing systems and of the possibility of tax measures which will encourage employers to share profits with their employes.

Federal taxes yield about 45 per cent of the total annual tax collections in the United States. Somewhat more than half of the state revenues and nearly three-fourths of the federal revenues are now derived from taxes levied by both jurisdictions, and in addition some of these taxes, notably the gasoline tax, are also levied by local subdivisions. In the course of an address on this subject Doctor McGill declared:

"It is hardly likely that any one of the plans—separation of sources, crediting state against federal taxes, or federal collection and distribution—will alone be used in the case of all the major duplicated taxes. It is more likely that some combination of these solutions, perhaps with others, will ultimately be found to produce the most satisfactory results. It is quite possible that, with more prosperous times, the national Government or the states can and will voluntarily relinquish the imposition of some of the duplicated taxes. Again Congress may conclude for example to substitute federal collection of gasoline taxes, plus an allocation of some or all the proceeds to such states as will relinquish their present gasoline taxes, in place of direct federal grants for highway construction. The states might thereby be assured of at least their present revenue, with less cost to themselves, and with no real loss of governmental or fiscal independence. Finally, and most important, a general survey of existing state and federal taxation would undoubtedly lead to the elimination both of injustices and of evasions which are almost inevitable in 49 uncoordinated systems."



Harris & Ewing

. . . . Senator Pat Harrison, chairman of Senate Finance Committee

REVENUE SEEKERS—*Dr. Roswell McGill, recent undersecretary, and Henry M. Morgenthau, Secretary of the Treasury*

Harris & Ewing

PETROLEUM TAX BILL—1937

State gasoline taxes	$756,930,000
Federal gasoline tax	203,025,380
Real and personal property taxes	137,850,000
Income taxes, federal, state and local	90,000,000
Severance taxes, state and municipal	38,500,000
Lubricating oil taxes, federal and state	34,346,590
Federal pipe line tax	12,304,203
Federal import taxes on petroleum and its products	7,300,000
Capital stock tax	7,000,000
Registration fees and licenses for tank trucks and other motor vehicles	5,500,000
State inspection fees and drilling permits	5,300,000
Municipal gasoline tax	5,000,000
Corporation franchises and mercantile licenses	4,000,000
Federal and state excises on the industry's trucks and other vehicles	2,650,000
Federal taxes on tires used by the industry	2,200,000
State taxes on other petroleum products	1,666,313
Federal tax on crude oil processed	967,375
State sales taxes on the industry's trucks, automobiles, and accessories	202,500
Federal taxes on parts and accessories for trucks and automobiles used by the industry	123,000
Total	$1,314,865,361

SPARKS FROM THE NEWS

OVERLAPPING

Federal and state governments have overlapped in assessing taxes so that each is now about covered up by the other and the oil taxpayer is covered by both.

DISCOVERIES CONTINUE

The Vacuum, New Mexico, field which was "rediscovered" last year, continues to have extensions of major importance.

AMERICAN JUSTICE

"American justice recognizes the principle that the protection of the innocent is equally as important as the conviction of the guilty," said Judge Stone in affirming his dismissal of charges against several defendants in the Madison case.

EXHIBIT 1

Arkansas, like many other states, had to have an exhibit of what not to do before operators were sold on conservation operations. Rodessa furnished the example.

WATER OUTPUT

East Texas water production has increased to more than 100,000 barrels daily—a sizeable stream in itself.

SOLUTION

California's new refinery construction totaling several million dollars will absorb large quantities of heavy oils through cracking operations when normal outlets contract.

DEMAND FOR SOLIDS

While many liquid products of refineries are not showing the wanted strength, the demand for petroleum wax is expanding and quotations are firm.

ANOTHER COUNTY

Ford County was added to the producing areas of western Kansas, a test showing production from the Mississippi lime.

LEADERSHIP

Southern Illinois operators continue to lead, with 51 completions last week and more than 300 tests drilling. They also received a cut in crude price.

OFFSETS

In appraising Europe's oil needs in case of war it should be kept in mind that restriction of normal peace-time consumption might offset the increased needs of war machinery.

PRIZE WINNING PICTURE—*Adjudged best industrial photograph of year by National Photographers Association. Taken by Carl E. Fehrenback, Continental Oil Co., showing company's Tepetate, La., plant*

Arkansas Puts Limit on Schuler-Rodessa

By GEORGE WEBER

SHREVEPORT, La., Sept. 26.—Developments in the conservation of oil and gas in the State of Arkansas took on increased importance this week. Following a hearing held in El Dorado on September 22, the Arkansas Board of Conservation ordered a graduated cutback in Schuler production. This measure was made immediately imperative by the rapid decline in reservoir pressure shown for the Jones sand during the past month.

Pursuing the same policy of effective conservation, the board today fixes attention on the South Miller County extension of the Rodessa field. A special order concerning an investigation into reservoir conditions and production practices in Miller County will pave the way for steps which may bring improvements in the undesirable current conditions in the field.

The production history of South Miller County is characterized by a lack of restriction. In the absence of effective conservation measures during the field's prime production period, open flow and dissipation of gas have resulted in reduction of the field to the pumping stage in many areas, and have led to the existence of great pressure gradients throughout the field.

To Prevent Waste

Citing these practices which contribute to waste and reduction of recoverable oil, the order states:

"Therefore, It is ordered by the Arkansas Board of Conservation that a thorough and complete investigation be made, by its duly appointed agents, into the condition of reservoir containing oil and gas and an investigation into the practices and methods employed in obtaining oil and gas from the reservoir, and

"It is ordered, That this investigation shall specifically include the volume and source of the natural gas now being wasted; underground waste; the reservoir pressure of the field as an average; the areas of differential pressure; accurate gas-oil ratios, and the producing characteristics of the field as a whole and the individual wells within the field, and

"It is ordered, That all operators of oil wells are required to permit and assist the agents of the Board of Conservation in making any and all tests including bottom-hole pressure and gas-oil ratio determinations that may be required by the Board of Conservation on any or all of his wells, and

"It is ordered, That all operators of oil wells are required to follow without deviation, the procedure outlined below in order to carry out the spirit and purposes of this investigation to the end that waste of crude oil and natural gas in the South Miller (Rodessa) oil field may be prevented and remedial measures ascertained which will give the greatest ultimate recovery of oil and gas.

"1. Each and every oil well in the field shall be restricted to a maximum production of 100 bbls. of oil in any one day of 24 hours effective October 1, 1938.

"2. Each and every oil well in the field shall be closed in and no oil nor gas shall be produced from any oil well after 7 a.m., October 20, 1938.

"3. Each and every oil well in the field shall be placed back on production at 7 a.m., October 27, 1938; however, the maximum production shall be limited to 100 bbls. of oil in any one day of 24 hours until changed by a formal order of the Board of Conservation.

Statements Required

"4. Each and every operator of oil wells shall file with an agent of the Board of Conservation sworn observations concerning his wells while they are operating normally on any of the following days: October 17, October 18, and October 19; the choke size, tubing, casing and trap pressures, production of water, oil and gas upon Form No. 12.

"5. Each and every operator of oil wells shall file with an agent of the Board of Conservation sworn observations concerning his wells while they are operating normally on any of the following days: October 28, October 29, and October 30; the choke size, tubing, casing and trap pressures, production of water, oil and gas upon Form No. 12."

The natural gasoline plant located in the Miller County field will be allowed to operate on the production of gas wells in the field during the oil well shutdown week. During the week of shut-in production, agents of the Board of Conservation will determine by approved methods the average reservoir pressure and the areas of differential pressure in the field.

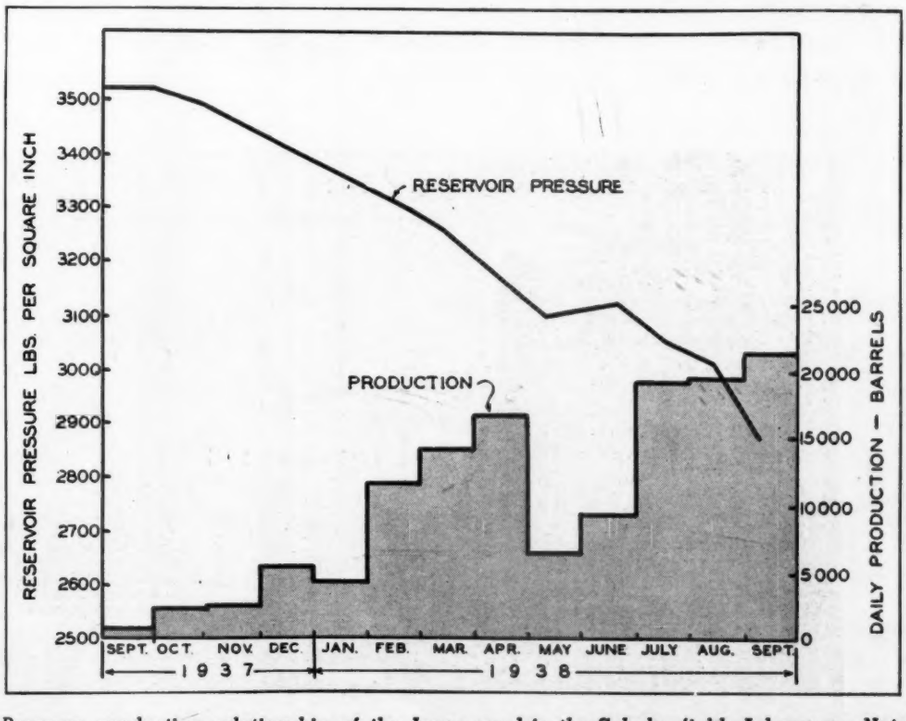
A report will be issued on the work, including any recommendations which the board considers necessary to prevent waste of oil and gas. In addition, the possibilities of recycling gas and repressuring the oil sand in the field will be thoroughly studied. The customary consideration of any claims of discrimination or hardship resulting from this order will be given in public hearing.

While the measures undertaken by the Board of Conservation may seem drastic, such action is necessary in making a study of the field. The field has progressed beyond the point where the ordinary conservation steps of curtailed production and reduction of gas-oil ratios, will suffice. In representing the rights of the state, and in promoting the interests of oil operators, lease and fee owners of oil property and others concerned in the field, the board is obliged to take those steps it considers necessary for effecting conservation.

Schuler Order

The Schuler field production, which consists mainly of oil and gas from the Jones sand horizon, will be regulated on a graduated cutback during October. As shown in the accompanying chart, reservoir pressure declined out of proportion to the withdrawals during the past month, and immediate action is needed to prevent further pressure drop. There are now 77 wells producing in the Jones sand, and by October 15 there will be about 90. An immediate cut in production, effective September 23, from 23,500 to 19,000 bbls. daily, was ordered. On October 1 the allowable production will be adjusted to 16,000 bbls. daily, and on October 15 it will be readjusted to 16,000 bbls. A study of the resultant pressure curve will determine future allowables.

From indications of the past few weeks the Schuler field is almost fully outlined. It is believed by some engineers that the sudden drop in pressure accompanied the added withdrawals of newly completed wells on the north and west, where, it was believed, the reserve existed which had previously sustained the reservoir pressure.



Pressure production relationship of the Jones sand in the Schuler field, Arkansas. Note the rapid decline during August and September

Important Refinery Expansion Is Completed in California

By L. P. STOCKMAN

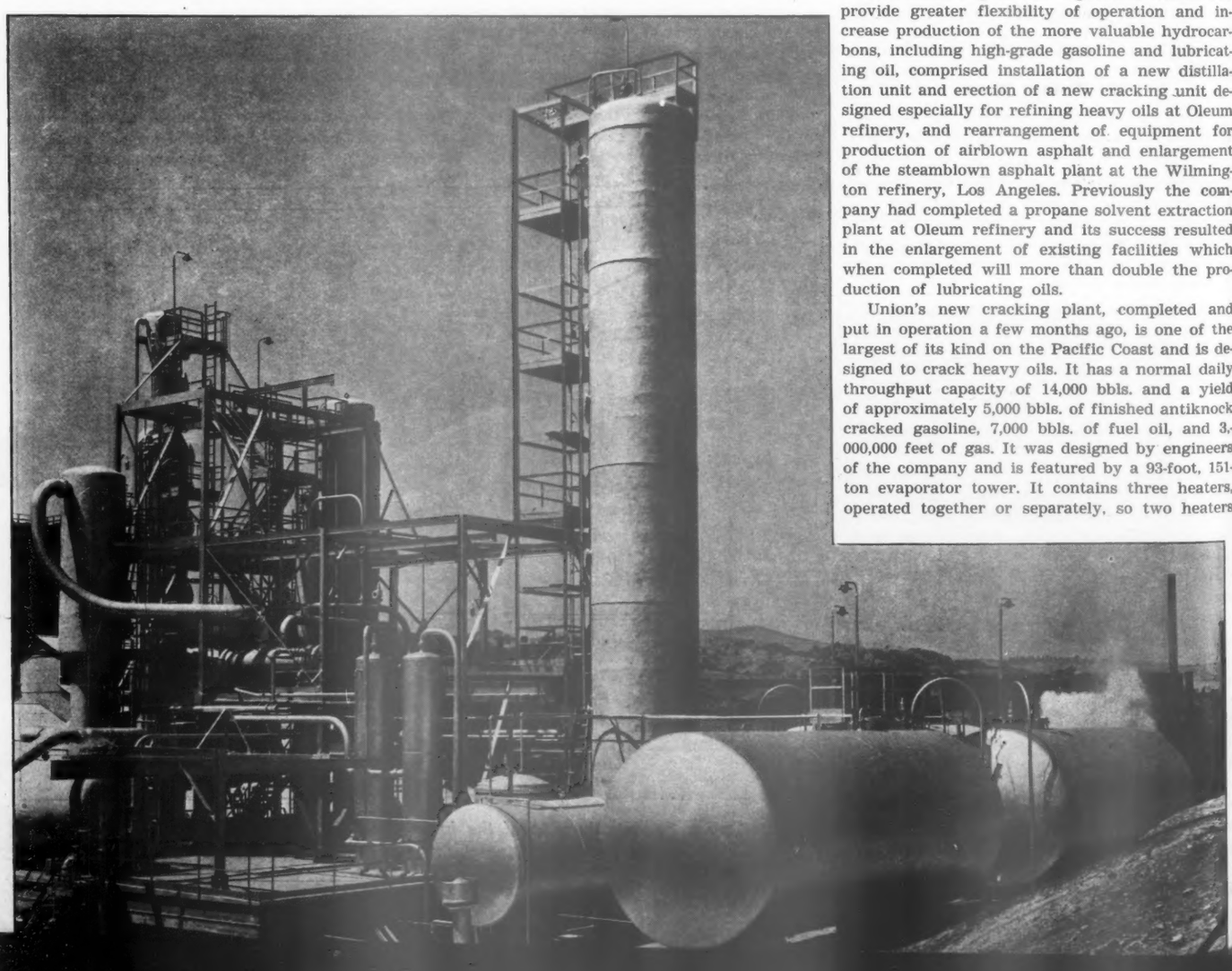
LOS ANGELES, Calif., Sept. 26.—Two refinery expansion programs involving the expenditure of approximately $4,000,000 have recently been completed in California.

Two years ago Shell Oil Co. initiated a construction program devised to enlarge and modernize the lubricating oil manufacturing facilities at its Martinez refinery. This program, involving an expenditure of over $1,000,000, was recently completed.

The first step was the construction of two new distilling units for manufacture of lubricating distillate from crude. The new topping or skimming unit cost approximately $300,000 and is equipped with a modern bubble type fractionating tower 11 feet in diameter and 88 feet high. In this unit the crude is efficiently stripped of gasoline, kerosene, and gas oil fractions. The crude residue containing the lubricating fractions and asphalt next passes to the second distilling unit, wherein the lubricating fractions are distilled overhead and separated from the asphalt, which is withdrawn as a residue. The main feature of this unit, which cost approximately $360,000, is its modern bubble plate fractionating tower, which is 21 feet in diameter and 82 feet 8 inches high, and operates under partial vacuum. In this tower very efficient separation is effected between the asphaltic residue and the overhead lubricating distillates. Furthermore, a very high degree of fractionation between the distillates is realized and the partial vacuum maintained insures that no decomposition by cracking occurs during distillation. The distilling units process 10,000 to 15,000 bbls. daily, depending on the type of lubricating crude charged.

The second stage in the program consisted in the construction of an improved type of solvent extraction plant to refine these distillates. This plant, recently completed at a cost of over $500,000, marked the completion of Shell's modern lubricating oil plant. The solvent extraction unit employs furfural as the selective solvent and treats up to 126,000 gallons of distillate daily, depending upon the degree of treatment given. The essential feature of the extraction plant is its vertical counterflow extraction tower, equipped with exchangers for furfural and charge oil. Facilities are provided whereby charging rates of distillate and solvent may be controlled and varied as desired. The relatively high treating temperatures employed with furfural and the difference in specific gravities of the raffinate and extract phases make counterflow operation in a vertical tower possible.

Lubricating distillate solvent extraction unit (north side) at Shell Martinez plant



Union Modernization

Union Oil Co. has completed an expansion and modernization program involving approximately $3,000,000 and is constructing an additional unit to its solvent extraction plant at Oleum refinery, San Francisco.

The initial step in this expansion, which will provide greater flexibility of operation and increase production of the more valuable hydrocarbons, including high-grade gasoline and lubricating oil, comprised installation of a new distillation unit and erection of a new cracking unit designed especially for refining heavy oils at Oleum refinery, and rearrangement of equipment for production of airblown asphalt and enlargement of the steamblown asphalt plant at the Wilmington refinery, Los Angeles. Previously the company had completed a propane solvent extraction plant at Oleum refinery and its success resulted in the enlargement of existing facilities which when completed will more than double the production of lubricating oils.

Union's new cracking plant, completed and put in operation a few months ago, is one of the largest of its kind on the Pacific Coast and is designed to crack heavy oils. It has a normal daily throughput capacity of 14,000 bbls. and a yield of approximately 5,000 bbls. of finished antiknock cracked gasoline, 7,000 bbls. of fuel oil, and 3,000,000 feet of gas. It was designed by engineers of the company and is featured by a 93-foot, 151-ton evaporator tower. It contains three heaters, operated together or separately, so two heaters

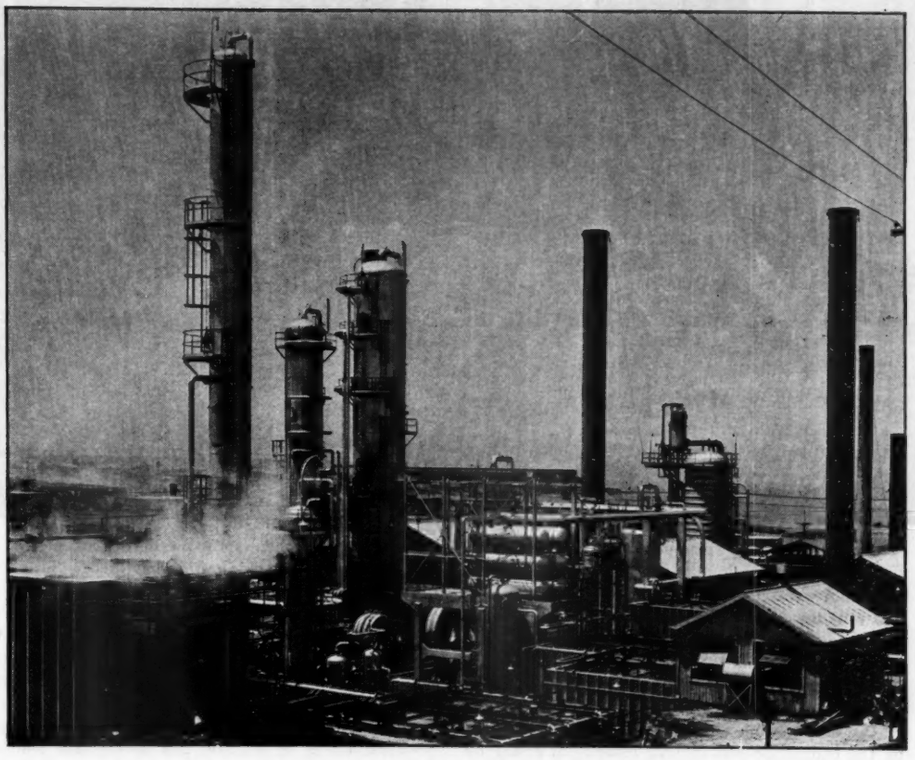
can be used in cracking heavy oil and the third to crack gas oil. The plant contains three high-pressure towers comprising an evaporator, rectifier, and a stabilizer. A low-pressure crude flash tower is used to flash off water before the charge is introduced into the high-pressure evaporator.

Distillation Unit

The crude distillation unit at Oleum refinery has a capacity of 15,000 bbls. per day of crude. Unlike the original distillation plant which consisted of a line of 20 stills, all performing similar functions and which served its purpose for a number of years, the new unit is only one large still with two fractionating columns, two large cooler boxes and the necessary pumps and heat exchangers. The atmospheric column is 55 feet high and 11½ feet in diameter. In addition there is a sloping roof fired heater embodying all the latest refinements in the design of tubular stills. Flow charts show the cold crude oil feed coming in first passes through the partial condensers, meeting the overhead vapor from the atmospheric column. Next it goes through a heat exchanger, meeting the light gas oil side cut. After that it passes through a second heat exchanger, meeting the residuum from the vacuum column. It then enters one side of the heater. From there it goes to the atmospheric column from which a light gasoline is taken overhead with a heavy gasoline and a stove distillate as side cuts, and the bottoms are returned to the other side of the heater. What is left of the crude oil is heated to a higher temperature and fed through a flash drum to the vacuum column. A light gas oil and a heavy gas oil are taken as side cuts and the residuum is either cooled and run to storage or sent to the vacuum plant for further distillation into lubricating oil stocks.

From the operator's standpoint the most interesting improvement is the substitution of automatic for manual control. The most essential temperatures are continuously reported on a recording potentiometer. In all vessels where the liquid level must be kept at a certain point this function is also automatically controlled. All valves regulating the flow of the various commodities are concentrated on a single board in the control house making it possible for the chief operator to do his work from one place. This centralization of control and the use of the most up to date devices makes it possible also to vary products to meet specific demands. The design for the plant was done by the development department of the company and construction was under supervision of the company's Oleum refinery engineering department. Fluor Construction Co. had the general contract for the complete unit with the exception of the heater which was covered by a separate contract with the Alcorn Combustion Co.

The cooling water supply had to be increased by about 8,000 gallons per minute and the steam and electric power by at least 35 per cent. Two separate drainage systems, one to return cooling water to the bay and another to take oily water and surface drainage to the refinery skimming ponds were also built. The sewers were designed by the Oleum refinery engineering staff. The need for increased steam and electrical energy was solved by completion of a deal with Pacific Gas & Electric Co. whereby this company agreed to erect and maintain a steam and electric generating plant adjacent to the refinery. Union will supply the fuel requirements of this plant and in turn will secure its requirements of steam and electric energy. Pacific Gas & Electric Co. fixed the budget at $5,000,000 for this unit which is similar and comparable with other units to be constructed at the Avon refinery of Tide Water Associated Oil Co. and at the Martinez refinery of Shell Oil Co.



New cracking plant of Union Oil Co.

In addition to the refinery expansion and erection of the new natural gasoline plant at Rio Bravo, Union Oil Co. is expanding its distributing facilities at several points along the Pacific Coast, especially in the Northwest.

Richfield Refinery

Most intense refinery construction activity on the Pacific Coast is found at Watson, Calif., where Richfield Oil Corp. is nearing completion on a $5,000,000 building program. Construction has been in progress for nearly a year on what is believed to be the largest single task ever undertaken in the history of Pacific Coast refinery construction.

Primarily the new Richfield refinery consists of two combination crude-topping and cracking units, each having a daily capacity of 25,000 bbls. To these has been added a catalytic polymerization plant with a capacity of 6,000,000 feet of gas per day, a reform unit, and modern gasoline blending and finishing facilities.

The Richfield refinery was designed by engineers of the Sinclair Refining Co. and will introduce many new and unsual practices. The first step in its construction was the erection of the heaters, which are the largest ever installed on the Pacific Coast. Each combination unit has a battery of four heaters, three of which are the vertical-tube down-fired type, while the other is the horizontal-tube double-fired type. The vertical heaters stand 132 feet high and are 30 feet in diameter, each containing roughly 1½ miles of 5-inch alloy tubing.

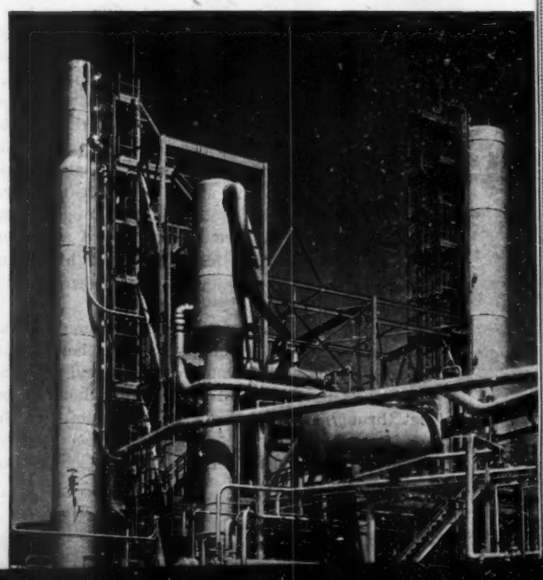
Each of the two combination units use seven separating and fractionating towers. The largest of these are 13 feet in diameter and 60 feet high and have been mounted on steel structures. Most of the towers are lined with chrome-alloy, since the equipment used in the early part of the refining cycle will be subjected to corrosive oils and gases. The plant as a whole represents the largest application of corrosion-resisting alloys in history.

Like most modern California refineries, the new Richfield plant will be operated mainly by electricity. Polymerization has placed a premium on the rich gases from the cracking units which would have been used for fuel in the not-distant past. More than 50 electric motors have been set and tested to date at Watson. The largest of these drive the charge pumps for the cracking units and are specially designed 1,000-h.p. explosion-proof motors. The explosion-proof characteristics are obtained through the use of bottled carbon dioxide gas which is released in a small steady flow into the enclosed interiors of the motors.

The control room for the Richfield refinery is impressive. A wall 105 feet long is covered on both sides by controls, switches, and recorders. The room is of heavy reinforced concrete construction, and a small positive pressure will be maintained inside with fresh air to prevent entrance of explosive mixtures.

When completed the Watson refinery will increase the capacity of Richfield's refining facilities by about 25 per cent.

Lubricating distillate solvent extraction unit (south side)



RODESSA IS LESSON IN

By Alec M. Crowell

The statement that any business today, either individually or as a whole, would knowingly conduct its affairs under a policy of wasteful haste to the end that more than 75 per cent of its potential gain will be lost is startling. To further state that this procedure was condoned, if not insisted upon, by those who stood to benefit most by a converse policy is amazing.

Out of a possible $32,000,000, as was represented by the calculated recoverable reserve of crude oil in the first major oil development in Arkansas in a dozen years, it appears that only $7,000,000 will be recovered—at least, by the methods of recovery we know today.

Those are not very pleasant statements, and might be construed to reflect upon the soundness of the oil operator, lease and fee owners of oil land, citizenship of county, city and state, and the regulatory body charged with the conservation of oil and gas. A knowledge of the history of controlled production, however, indicates clearly that what has happened in Arkansas was to be expected. Such a story is indelibly woven into the fabric of conservation and controlled production history. Texas was prepared for Rodessa, Louisiana corrected the faults of her conservation statutes in time—both states had years of experience to guide them. The cross currents of opinion which have been generated and the vital conflict of interests which have been exposed, not only in the states sharing Rodessa, but in Kansas, Oklahoma, New Mexico, and other states, prior to the enactment of their respective conservation laws are a matter of record.

Cure Demonstrated

The waste which was created through wide-open, unrestricted production at Oklahoma City, East Texas, the Panhandle, Hobbs and many other fields are responsible for the laws on the books today, and the waste which took place makes that of Miller County, Arkansas, seem almost inconsequential, all of which merely proves that while oil producing states will use the same pattern in drawing up their conservation laws, it is also necessary that they feel the waste and taste the cure experienced by other states before enough agitation will arise to insure action toward a proper statute. Arkansas has felt the waste in Miller County, and her new field, Schuler, is demonstrating the cure.

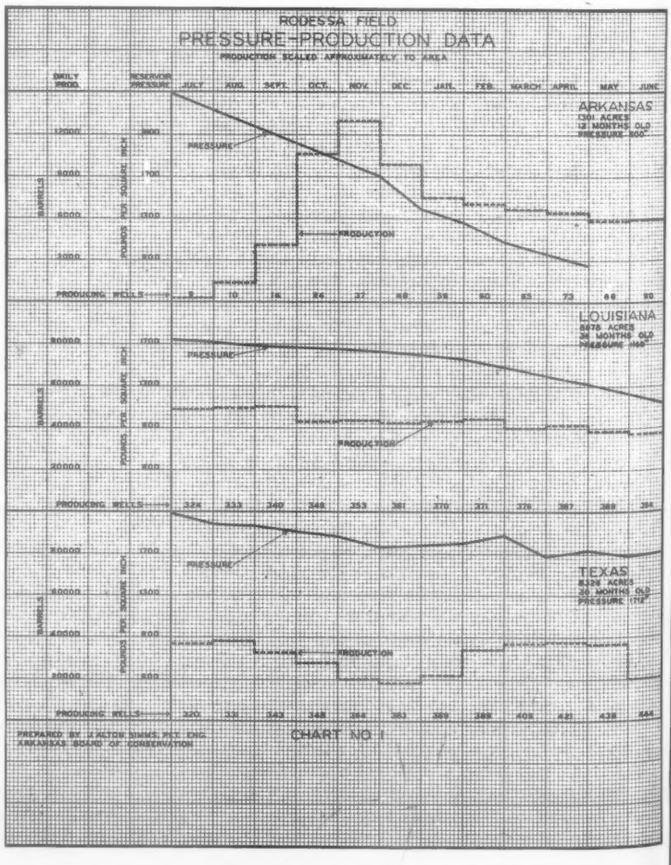
Almost without exception the testimony of expert engineers and geologists that scientifically controlled production would conserve and produce millions of barrels of oil that would otherwise be lost through dissipated energy, if wasteful methods of production were continued, have been looked upon with skepticism, if not utterly ignored. Also, without exception, when the predictions of these experts began to be borne out and it was obvious to the people, the legislature, the courts, and the industry that reservoirs of oil and gas were suffering irreparable damage by dissipation of natural reservoir energy, which is absolutely necessary in obtaining the larger ultimate recovery, and that the confusion, wasteful haste, duplication of development and operation outlay, were not only creating waste of oil and gas above and below ground, but that the vested rights of owners of oil and gas within the reservoirs were suffering from undue, noncompensated drainage across property lines as a result of nonuniformity of withdrawal, adequate legislation was passed and the orders and rules of the regulatory bodies were upheld by the courts. Some states have added strength of intent to their laws in the interest of protection for the small tract from confiscation of the oil underlying it by making provision whereby the tract may be pooled with adjacent tracts, when it cannot meet the spacing requirements set by the regulatory body, and share equitably in the production of oil. (Louisiana, New Mexico, Oklahoma.)[1]

As disquieting as Arkansas' experience has been, it is at least fortunate that the majority of the Rodessa field underlies Texas and Louisiana, conservation-wise, and if the experience of her sister states be a criterion she will not be caught without protection again. It is hoped that this experience will prove of benefit in the future, and we have every reason to believe it will, for the second major discovery, now in the process of being developed and conservatively containing 150,000,000 bbls. of oil, is voluntarily cooperating with the Board of Conservation by abiding rigidly by its rules and regulations. Results are being obtained which are as pleasing as the first effort was displeasing.

That plans are under way for a new conservation statute is reflected in a paper presented before the American Bar Association at Cleveland, Ohio, on July 19, 1938, by W. Henry Rector, entitled "Legal History of Oil and Gas Conservation Statutes in Arkansas" which stated in part:

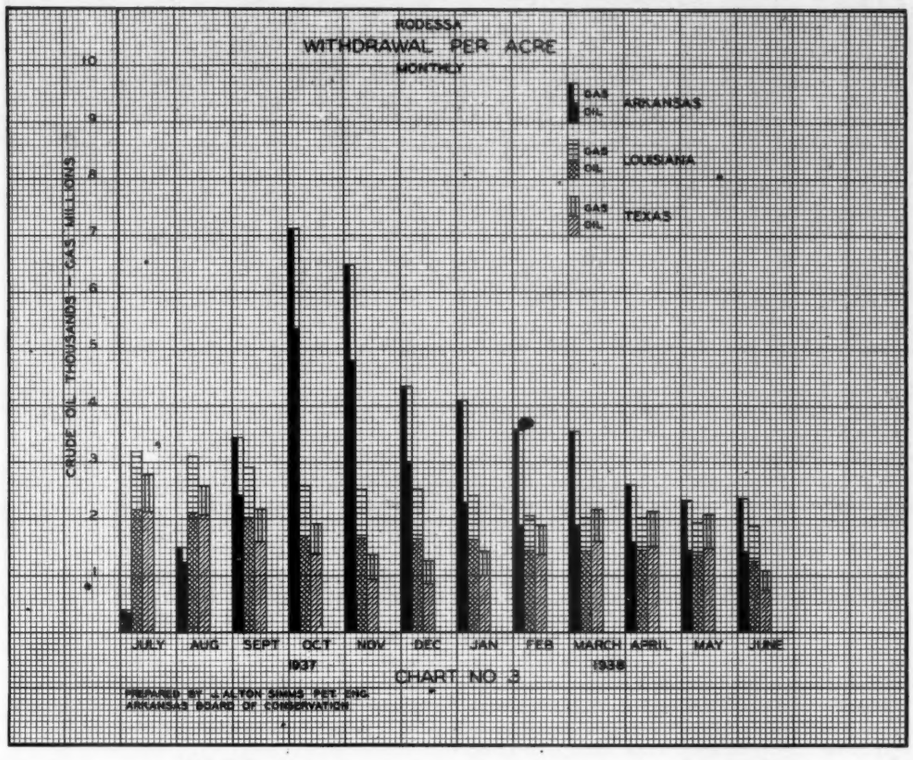
"It is not thought that the statutes of Arkansas are what they should be and there is room for great improvement. A bill was prepared and presented to the general assembly of 1937 but reached the calendar too late to be considered. It is now ready for presentation to the next general assembly.

"An effort will be made to secure its adoption when the legislature convenes in 1939, and, if it is adopted, I think we can be safe in saying it will be the very best conservation statute in existence."



[1]Act No. 225, Sec. 6, Sub-div. 6, Acts of Louisiana, R.S. 1936. Chap. 72, Sec. 12, Laws of New Mexico, 1935. Chap. 59, Act. 1, Sec. 3, Session Laws of Oklahoma, 1935.

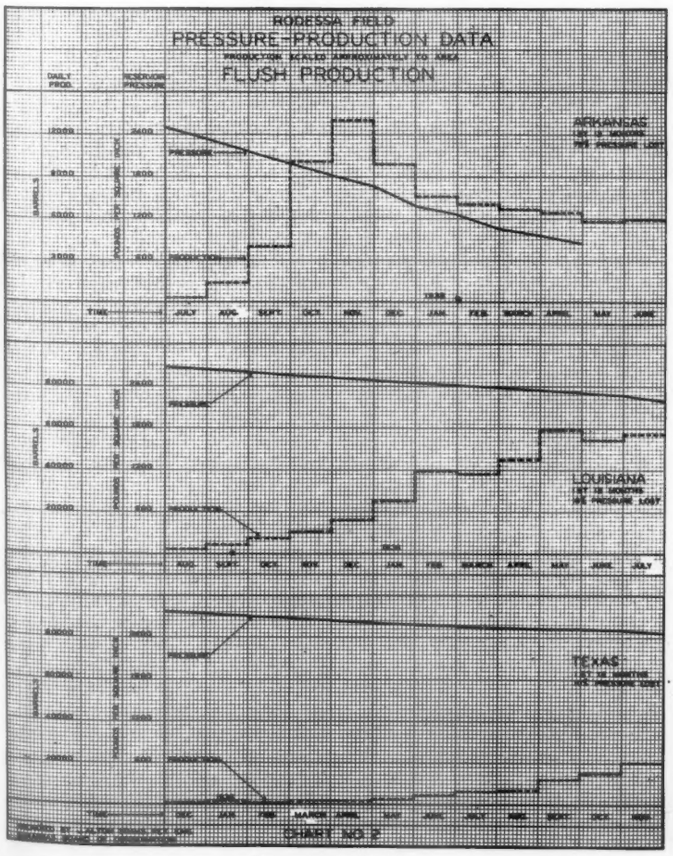
AN OBJECT IN CONTROL



Accurate records have been obtained as to production of both oil and gas, gas-oil ratios, reservoir pressure and related subjects by the statisticians and engineers of all three conservation bodies interested in the Rodessa field. We will attempt to set out a faithful account of production and development for the entire reservoir, and then illustrate what happened to Arkansas and why it happened.

The Rodessa field is an accumulation of oil and gas resulting from a northeast-southwest fault along the north flank of the Sabine uplift which displaces the formation about 600 feet as a maximum. The field lies along the north or upthrow side of the fault which extends from Jefferson, Tex., through Caddo Parish, La., into Miller County, Arkansas.

Production is obtained from the upper portion of the lower Glen Rose section of the Trinity group at depths ranging from 5,500 to 6,100 feet. The three principal reservoirs in the field are the Hill, which produces only gas, and the Gloyd and Young, which produce both oil and gas. The productive horizons in Arkansas are known as the Hill sand, upper Caddo Levee Board, Mitchell sand, lower Caddo Levee Board (oolitic lime at top) with an average derrick floor elevation of 260 feet. The gas-oil contact is found respectively at 5,620 feet, 5,715 feet, 5,790 feet, and 5,820 feet. The average thickness is 65 feet to 10 feet plus. The permeability, expressed in millidarcys, varies from 0-700 parallel and 0-700 vertical with porosity ranging from 12 per cent to 30 per cent.



The entire structure is in some degree intercommunicating because of the practice, in the early days of the field, of setting casing on top the Hill or Gloyd, and drilling the entire structure. This situation has been remedied by plug back operations and recompletions.

Since we are going to be concerned about the field after Arkansas entered the picture, we present the data on field operations in all states which will be of value later.

LOUISIANA

Oil was first discovered in the Louisiana portion of the Rodessa field July 7, 1935, and that section has likewise assumed first place in the amount of oil produced and in recoverable reserves.

In the absence of a comprehensive conservation statute, later obtained, oil was extracted at a rapid rate, and wells completed without supervision exposed all horizons within the same well-bore to the detriment of the reservoir. The effect of these practices is now being felt keenly. A great many wells are contaminated by water, and low-pressure areas have developed extensively. Gas has been channeled in and the ratio problem is troublesome.

Under the authorization given it by the enactment of a conservation law, however, the Conservation Department has made real progress in correcting malpractices existing in the field. Ratios have been reduced, gas wastage stopped, and the

TABLE 1—LOUISIANA PRODUCTION DATA

Oil Wells

Date—	Number wells	Daily M.C.F. gas	Daily Barrels oil	Cu. ft. ratio
July, 1937	324	96,705	49,238	1,960
August	333	99,166	49,801	1,990
September	340	96,363	50,370	1,910
October	346	93,479	42,969	2,175
November	353	87,443	43,569	2,000
December	361	97,146	42,312	2,295
January, 1938	370	107,929	43,660	2,470
February	371	88,842	44,132	2,020
March	376	101,545	40,151	2,520
April	387	110,499	41,648	2,650
May	389	112,576	38,808	2,870
June	394	106,461	37,922	2,810
Total July 1, 1937			29,588,188	
Total July 1, 1938			45,544,263	
Intervening			15,956,075	

Gas Wells and Total Gas

Date—	Wells	Daily M.C.F. gas	Daily Total all gas
July, 1937	91	139,360	236,065
August	94	132,860	232,035
September	94	126,971	223,334
October	95	133,118	226,597
November	97	139,411	226,854
December	99	133,990	231,136
January, 1938	97	99,161	207,090
February	98	87,139	175,981
March	99	53,144	154,689
April	95	53,649	164,148
May	93	58,323	170,899
June	88	70,646	177,107
Total July 1, 1937		297,953,754	
Total July 1, 1938		372,958,217	
Intervening		75,004,463	

TABLE 2—LOUISIANA PRESSURE-PRODUCTION DATA

(Oil area only)

Original 2,680 lbs. at —5,750 feet

Date—	Reservoir pressure	Monthly change	Monthly production	Recovery bbls. per lb. drop
July, 1937	1,728	—29	1,526,378	52,634
August	1,695	—33	1,543,831	46,783
September	1,675	—20	1,511,100	75,555
October	1,661	—14	1,332,039	95,146
November	1,634	—26	1,307,070	50,272
December	1,601	—33	1,311,672	39,748
Jan., 1938	1,572	—29	1,353,460	46,671
February	1,497	—75	1,235,696	16,476
March	1,407	—90	1,244,681	13,830
April	1,330	—77	1,249,440	16,226
May	1,251	—79	1,203,048	15,228
June	1,160	—91	1,137,060	12,502

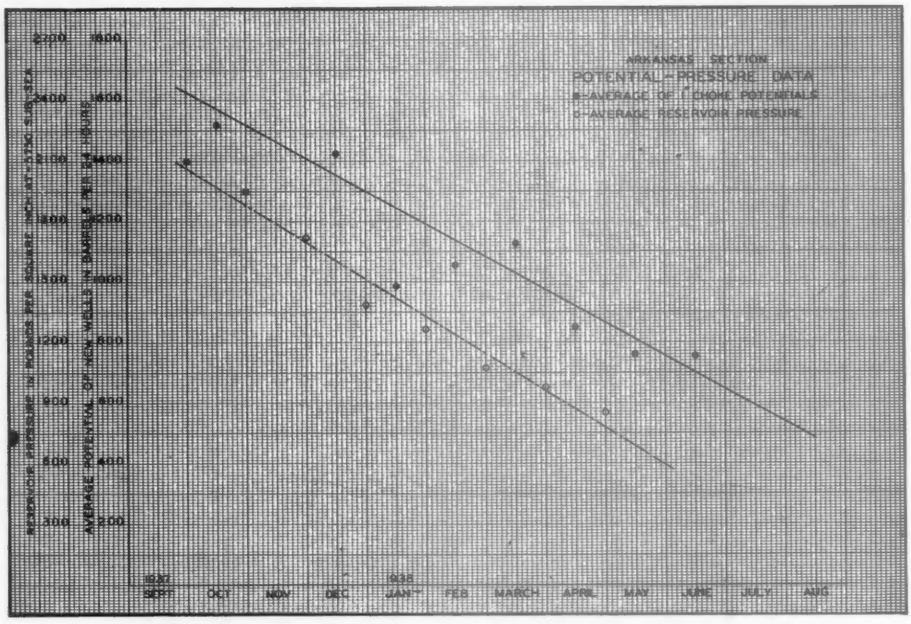


Chart No. 4

bottom-hole pressure decline has been alleviated. Corrective operations are constantly being undertaken and the deleterious effect of opposing multiple formation pressures to one another is being remedied. To the members of the Rodessa Operators Committee and H. W. Bell, its engineer, and the unwavering insistence of W. H. Chisholm, chief engineer of the Department of Conservation, that gas could not be wasted, should go a great deal of the credit for fostering practices which are prolonging the field and increasing its value to the industry.

At the end of 36 months' operation in the oil area, 299 wells were flowing, 64 were on gas lift, and 31 were on the beam. Approximately 134 wells were making in excess of .5 per cent salt water.

TABLE 3—TEXAS PRODUCTION DATA

Oil Wells

Date—	Number wells	Daily M.C.F. gas	Daily Barrels oil	Cu. ft. ratio
July, 1937	320	104,085	37,107	2,805
August	331	77,265	38,288	2,018
September	343	98,050	32,705	2,998
October	348	84,204	28,068	3,000
November	364	61,510	20,442	3,009
December	383	61,371	18,569	3,305
January, 1938	389	69,953	22,522	3,106
February	389	86,302	34,274	2,518
March	406	105,176	36,205	2,905
April	421	114,742	37,608	3,051
May	438	113,665	37,121	3,062
June	444	68,723	20,619	3,333
Cumulative July 1, 1937			10,379,128	
Cumulative July 1, 1938			21,434,300	
Intervening			11,055,172	

Gas Wells and Total Gas

Date—	Wells	Daily M.C.F. gas	Daily Total all gas
July, 1937	11	8,528	112,613
August	11	14,690	91,955
September	13	16,739	114,789
October	14	24,247	108,451
November	16	28,879	90,389
December	15	28,302	89,673
January, 1938	16	26,750	96,703
February	18	36,181	122,483
March	16	27,831	133,007
April	16	35,020	149,762
May	16	32,317	145,982
June	16	32,182	100,905
Cumulative to July 1, 1937		23,458,256	
Cumulative to July 1, 1938		64,693,034	
Intervening		41,234,778	

TABLE 4—TEXAS PRESSURE-PRODUCTION DATA

(Oil area only)

Original 2,765 lbs. at —5,750 feet

Date—	Reservoir pressure	Monthly change	Monthly production	Recovery bbls. per lb. drop
July, 1937	1,979	—17	1,150.317	67,666
August	1,919	—60	1,186,928	19,782
September	1,879	—40	981,150	24,529
October	1,772	—107	870,108	8,132
November	1,792	+20	613,260	gain
December	1,812	+20	575,639	gain
Jan., 1938	1,864	+52	698,182	gain
February	1,891	+27	959,672	gain
March	1,680	—211	1,122,355	5,319
April	1,743	+63	1,128,240	gain
May	1,696	—47	1,150,751	24,484
June	1,711	+15	618,570	gain

TEXAS

Oil was discovered in the Texas portion of the field December 26, 1935, and wells were produced at a relatively high rate during the period of rapid development. Those wells completed in the Young formation, particularly, were subjected to heavy withdrawals, and there was an attendant rapid decline in pressure. As the field reached maturity, however, and the outlet was cut back within market demand, the pressure decline was reduced materially and is now increasing!

At the end of 30 months' operation in the oil area, 408 wells were flowing, 30 were on gas lift and only 6 were on the beam. Approximately 119 wells were making in excess of .5 per cent salt water.

ARKANSAS

Production was extended into South Miller County, Arkansas, June 22, 1937, and since discovery the field has never been prorated in the true sense of the term. A basis of proration, identical with that of Louisiana and Texas, was adopted by the Board of Conservation with the advent of 10 wells in the field. The operators, lease owners, royalty holders and citizenship of Miller County, through mass meeting, petition and local newspapers, appealed to the governor to intervene. As a result, the effective date of the order was made January 1, 1928, and the field was allowed to flow wide open

(Continued on Page 105)

TABLE 5—ARKANSAS PRODUCTION DATA

Oil Wells

Date—	Number wells	Daily M.C.F. gas	Daily Barrels oil	Cu. ft. ratio
July, 1937	2	624	390	1,600
August	10	2,800	1,450	1,900
September	13	8,357	4,187	1,996
October	22	22,491	10,710	2,100
November	32	34,285	13,076	2,622
December	38	27,333	9,925	2,754
January, 1938	56	28,365	7,588	5,056
February	60	43,249	7,111	6,082
March	65	43,686	6,791	6,432
April	73	28,281	6,516	4,356
May	86	25,581	5,890	4,343
June	90	29,744	5,992	4,964
Cumulative to July 1, 1937			15,590	
Cumulative to July 1, 1938			2,491,711	
Intervening (both oil and gas wells)			2,476,121	

Gas Wells and Total Gas

Date—	Wells	Daily M.C.F. gas	Daily Total all gas
July, 1937	..	.....	624
August	..	.....	2,800
September	1	9,133	17,490
October	2	12,957	35,448
November	2	12,273	46,558
December	5	16,135	43,468
January, 1938	7	25,243	63,608
February	9	25,208	68,457
March	8	20,720	64,406
April	8	15,755	44,136
May	8	11,435	37,016
June	8	10,546	40,290
Cumulative to July 1, 1937		19,344	
Cumulative to July 1, 1938		14,039,486	
Intervening		14,020,142	

TABLE 6—ARKANSAS PRESSURE-PRODUCTION DATA

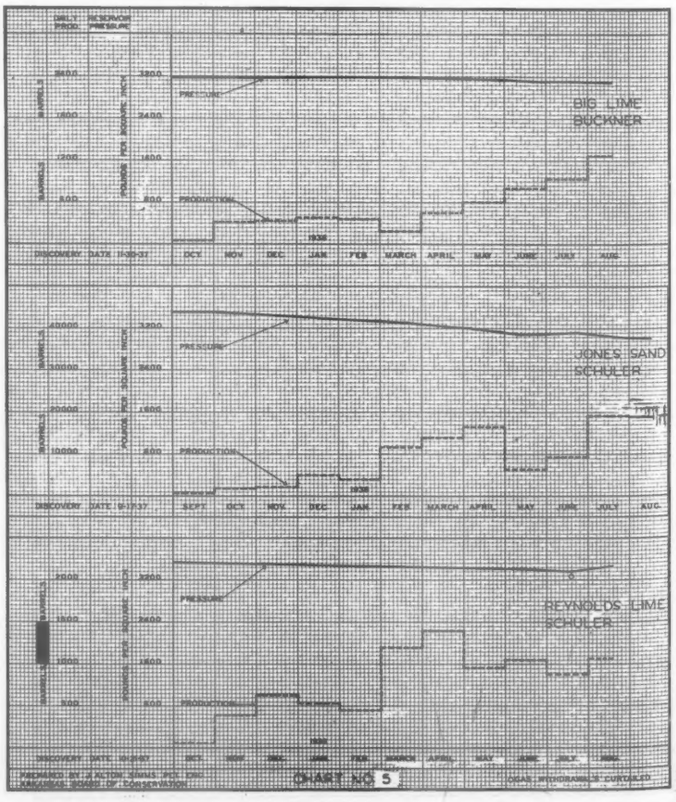
(Oil area only)

Original 2,600 lbs. at —5,750 feet

Date—	Reservoir pressure	Monthly change	Monthly production	Recovery bbls. per lb. drop
July, 1937	2,500	20	12,090	605
August	2,340	160	44,950	281
September	2,180	160	125,610	785
October	1,920	160	332,010	2,075
November	1,860	160	392,280	2,452
December	1,712	148	307,675	2,079
Jan., 1938	1,386	326	250,663	786
February	1,264	122	217,154	1,780
March	1,068	196	226,437	1,155
April	970	98	205,158	2,093
May*	850	120	188,626	1,572
June*	700	150	185,558	1,237

*Estimated reservoir pressure. Wells being put on beam and gas-lift.

Pressure-production data
Three Arkansas oil reservoirs, from completion data



Washington View of Interstate Compact

By HENRY D. RALPH

WASHINGTON, D. C., Sept. 26.—The attitude of federal Government officials toward extension or revision of the Interstate Oil Compact is one of dispassionate observation. While officials of the Department of the Interior concerned with the conservation of oil decline to be quoted, they expressed the view that if Secretary Harold L. Ickes is called on in the near future to state his attitude toward the compact, he will simply reiterate the opinion he has given in the past, particularly in his telegram to the meeting of the Interstate Oil Compact Commission in Colorado Springs last July.

On that occasion the secretary declared that substantial progress has been made under the compact in the orderly approach toward a solution of the problem of oil conservation and that there is now no material conflict between state and federal agencies in this regard. At the same time, Mr. Ickes pointed out that steps should be taken toward the establishment of a permanent oil conservation policy for the United States "based on mutual respect for our separate and joint responsibilities and having the prime purpose of assuring an adequate supply of oil at reasonable prices."

Ickes' Opinion

Secretary Ickes is thus represented as being of the same opinion as he was in July, 1937, when he recommended to the President that Congress ratify a two-year extension of the compact but with the meager endorsement that "some good may be accomplished by this compact."

This feeling that "some good may be accomplished" is echoed by other officials of the Department of the Interior who hold that any effort on the part of the oil-producing states, either separately or collectively, to reduce waste in the production of oil is a worthy purpose and should be encouraged. They point out, however, that some states outside the compact have better machinery for preventing waste than some states within the compact, and that the compacting states have not taken all possible steps to fulfill the conservation objectives set forth in the compact. On the other hand, they hold that some of the criticisms of the compact are unjustified since it has operated neither to increase the price of oil to distributors and the public nor to decrease the amount of oil which any particular state may allocate to its producers. The compact specifically states that its purpose is not to limit the production of oil for the purpose of influencing the price, and state proration and production allowables do not depend upon the existence of the compact.

Congress Aloof

An interstate oil compact of the type now in effect is of no particular concern to the federal Government, in the view of Interior Department officials, for while any such compact cannot be effective until ratified by Congress, Congress has nothing more than a veto power over such an agreement and would not be expected to disapprove unless the states proposed to take over functions which the constitution specifically delegates to the federal Government. Therefore, they feel the federal Government should take no part in the continuance of the compact, which expires next September, but if it is renewed in somewhat its same form it will be ratified by Congress as a matter of course.

Although the compact stands on its own feet independent of other factors affecting oil production, it is pointed out here that its continuance may possibly be influenced by future developments which may have a bearing on the attitude of some of the states now members of the compact. Among these may be mentioned the fact that the Texas oil proration law expires next year and that the recent election of a new member to the Texas Railroad Commission, G. A. Sadler, may possibly bring a change in the position of Texas toward oil conservation and proration in general. Officials here express the informal opinion that no new oil compact could be negotiated which does not have the approval of Texas, because of the dominant position of that state in the nation's oil production, and that the future action of Texas regarding conservation and production control may be watched closely by other states when considering renewal of the compact.

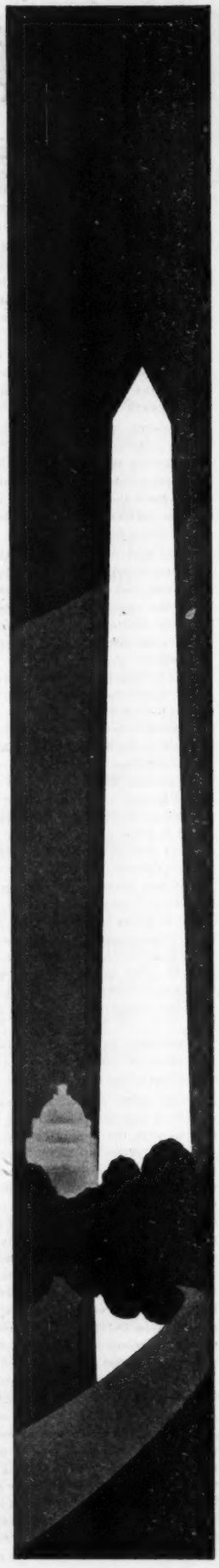
Connally Act

Another potential complication is the fact that the Connally "hot oil" law also expires next June, although there is no direct relationship between the Connally Act and the Interstate Compact. The Connally Act, through its check on interstate shipments, simply aids the enforcement of state proration laws where necessary, and would be a dead letter in the absence of effective state laws, but state proration laws are not called for by the Interstate Compact and do not depend on its continuance.

When the Connally Act came up for renewal a year and a half ago, Secretary Ickes recommended it be made permanent, but because of opposition from independent jobber interests it was extended for only two years. When asked recently what his present attitude is, Secretary Ickes indicated he still favors a permanent Connally Act, declaring, "I have always been in favor of closer cooperation between the states and the federal Government for the purpose of conserving the oil supply." When pressed for an elaboration of what form this cooperation should take, the Secretary declared that he would rather wait until the bill comes up and take a fresh view of the situation.

Extension Likely

The general attitude of officials of the Interior Department toward the Interstate Oil Compact appears to be that it is all right with them if the compact is extended. They refrain from criticising it for not having accomplished more, and yet they are unable to say much in its praise. The opinion already expressed by Secretary Ickes that "some good may be accomplished" is about all that can be said for the compact, in the opinion of several. The argument often heard that the compact has prevented federal control of the oil industry in the name of conservation is discounted here since it is held that if federal control had been instituted at the time the compact was originally drawn it would have been of a temporary nature only and designed to cope with an emergency situation, and if the waste of petroleum resources should become flagrant in the future, the existence of the Interstate Compact would not alone prevent the federal Government from attempting to exercise emergency control.



Judge Stone Refuses Demand of Department of Justice

MADISON, Wis., Sept. 27.—Federal Judge Patrick T. Stone filed a 16-page decision here last week refusing the Government's demand that he rescind his order of July 19 granting freedom to 10 executives and one oil company convicted by a jury here last January of conspiring to raise and fix gasoline tankcar prices.

"The court is thoroughly satisfied that the procedure adopted here and now complained of by the Government is not only sound in principle, but is fully supported by an abundance of authorities," his decision stated, and the greater part of the order was devoted to citations of cases sustaining his position.

At the close of testimony in the trial last winter, Judge Stone said, the court was of the opinion that some of the defense motions for directed verdicts "were well taken."

However, his decision continued:

". . . The testimony was so voluminous, the exhibits so extensive in number, that it seemed impelling that no ruling on the motion be made until there was opportunity for a thorough study of the evidence, and a careful and deliberate consideration of the law, with the aid of arguments and briefs.

"The jury had been sequestered from October, 1937, to January, 1938, which included the Thanksgiving, Christmas and New Year's holidays, and to hold it for a further time sufficient to permit the court to rule properly seemed a further hardship which I could not inflict upon the jury, and one which should be avoided if possible.

"Under these circumstances, and with full knowledge and acquiescence of counsel for all parties, the court denied the various motions for a directed verdict under an explicit reservation of its right to pass on the questions of law after verdict, as of the time made, and as the record, upon careful study, might require.

"Not only was no objection made to this procedure, except by one of the counsel for some of the defendants, but there was no suggestion from anyone that the court might lack the power to reserve its ruling on these questions of law, or that the practice was in any way out of the ordinary.

"If any serious question in this respect had been raised, it is obvious that the jury might have been asked to retire until the court had disposed of the motions. Its convenience would have to yield to the requirement that the court perform its plain, judicial duty, and not put itself into a position where it would have to take the verdict with but two alternatives, viz., to sentence innocent defendants, or put them to a new trial.

"American justice recognizes the principle that the protection of the innocent is equally as important as conviction of the guilty.

"The court was in no doubt whatever about the power to reserve its ruling on these questions of law, and to pass thereon after the verdict with the same force and effect as before verdict. Had the practice here followed been as novel and so devoid of judicial power as the Government now claims, it would seem that the court was entitled to some suggestion to that effect at the time the rulings were reserved. Neither was the question raised on the oral argument on the motions after verdict nor on the briefs filed by government counsel on the motions after verdict.

"Certainly the power as exercised in this case is no broader or different in principle than the admitted power to dismiss before taking a verdict. A question of law does not become a question of fact by an unwarranted submission of the case to a jury.

"However, in the face of an express reservation of the questions of law involved, such a result is impossible.

"The constitutional right of a defendant to a trial by jury requires that all questions of law be decided by the court and questions of fact by a jury. It is just as important that the defendant be given the benefit of the one as of the other, and if he be denied one or the other, his constitutional right to that extent has been denied.

"In the careful and full review of the record and study of the briefs filed on the motions before and after verdict, the court was definitely of the opinion that as to most of the defendants dismissed by the order of July 19 last, there was no substantial evidence indicating participation in the conspiracy; and that as to others the evidence adduced was clearly as consistent with innocence as with guilt, which raises a question of law for the court, not one of fact for the jury, and in such circumstances it becomes the duty of the court to grant the motions for a directed verdict. To do otherwise is clearly error."

Judge Stone cited nine decisions as holding that where the evidence is as consistent with innocence as with guilt it is the court's duty to direct a verdict for the defendant, and cited other decisions contesting the Government's position that the power to grant judgment notwithstanding the verdict applies only in civil cases.

"It is asserted that the rules of the federal courts as promulgated in 1934 do not recognize a right to give judgment *non obstante veredicto* in a criminal case," he said in his conclusion.

"The court has failed to ascertain that they prohibit reservation of questions of law pending a verdict; and in the light of the cases cited, and many others, it would seem that if the U. S. Supreme Court, in promulgating new rules, intended to denounce the practice followed by it in the France and other cases cited above it would have done so expressly."

It was therefore ordered that the Government's application to expunge that part of the order referred to in its petition be denied.

Sale of Confiscated Oil At 30 Cents Is Upheld

AUSTIN, Tex.—The recent sale in Henderson of 122,000 bbls. of confiscated oil for 30 cents a barrel was confirmed by District Judge Roy C. Archer.

Attorney General William McCraw had asked the court to void the sale on grounds of inadequate price.

"If a court could hold up a valid sale because it did not bring enough we could never have a forfeiture sale," Judge Archer commented.

Estimated Gasoline Stock Cut Lowers October Crude Need

The daily average supply of domestic crude oil estimated by the Bureau of Mines to meet the market demand in October, 1938, is 3,366,800 bbls. This is 77,500 bbls. less than the estimate for September, 1938, and 7 per cent less than the actual demand for domestic crude in October, 1937. The decline from a year ago is due chiefly to the fact that a substantial decline in gasoline stocks is estimated for October, 1938, whereas in October, 1937, excess crude runs resulted in an increase of about 3,000,000 bbls. in finished gasoline stocks.

Daily average crude oil production and runs to stills during the five weeks, July 30 to September 3, averaged 3,383,000 bbls. and 3,260,000 bbls., respectively. During this period total crude stocks (including heavy crude in California) declined 3,677,000 bbls., 3,157,000 bbls. of which was in domestic grades. The average daily decline in domestic grades of 90,000 bbls., added to the production, gives an apparent daily average demand of 3,473,000 bbls. This compares with the bureau's estimate of 3,438,100 bbls. for August. The difference may be attributed to the fact that gasoline stocks were not reduced as might have been expected.

Domestic demand.—The estimate of motor-fuel demand for October, 1938, is 45,800,000 bbls., a gain of 1 per cent over demand in October, 1937. The total domestic demand for the first seven months of 1938 ran slightly under the record of 1937 but this situation was due entirely to the poor record of July, 1938. Indications are that the demand in August, 1938, was at least equal to that in August, 1937, and that by October business recovery will have progressed enough to show a gain in demand over the previous year.

Exports.—Exports of motor fuel have been estimated as 4,400,000 bbls., the same as the estimate for September.

Stocks.—Stocks of finished and unfinished gasoline on July 31 totaled 76,732,000 bbls.; by August 31 these stocks had been reduced to about 71,000,000 bbls., but this was 4,000,000 to 5,000,000 bbls. above the level of August 31, 1937. Regardless of what happens to these stocks in September, it is obvious that there is no need of repeating the accumulation of October, 1937; rather, there is every reason for feeling that some of the excess will be liquidated this October, the last month for which it is reasonable to expect a reduction. Accordingly, the bureau estimates a reduction of 1,900,000 bbls. in finished stocks in October, 1938.

Gasoline production.—Benzol and direct sales and losses of natural gasoline have been estimated as 1,000,000 bbls., making refinery production 47,300,000 bbls. This is distributed among the various districts as follows (thousands of barrels): East Coast, 6,220; Appalachian, 1,650; Indiana-Illinois, 8,240; Oklahoma, 2,870; Kansas, 2,680; Texas inland, 3,720; Texas Gulf Coast, 11,980; Louisiana Gulf Coast, 1,510; North Louisiana-Arkansas, 910; Rocky Mountain, 1,110; California, 6,410.

Runs to stills.—Natural gasoline consumption at refineries in October is estimated as 8.7 per cent of the total production, compared with 8.5 per cent in October, 1937. The yield of straightrun and cracked gasoline rose 44.7 per cent in July, 1938, this being the high for the year. With gasoline consumption declining and the domestic heating season beginning, gasoline yields should logically not increase in October, hence the bureau estimates a yield of 44.4 per cent for October, 1938, the same as estimated for September. The application of this yield to the straightrun and cracked production of 43,190,000 bbls. gives crude runs of 97,320,000 bbls., or 3,139,000 bbls. daily. Of the total, 2,350,000 bbls. is the estimate for foreign crude runs.

Exports, fuel, and losses.—Data received from the largest exporters indicate a decline in exports of crude in October, compared with September. However, the September estimate of 7,000,000 bbls. was probably too low. It was therefore decided to retain the 7,000,000-bbl. estimate for October, 1938, pending developments in European trade. The consumption of crude as fuel should logically rise in the fall, hence the estimate for this item and losses has been raised to 2,400,000 bbls.

Total demand.—The total demand for domestic crude in October, 1938, as indicated by the estimates above is 104,370,000 bbls., or 3,366,800 bbls. daily.

Crude oil demand by states.—The breakdown of the total estimated daily demand for domestic crude oil of 3,366,800 bbls. gives the following market demand by states of origin. As demand may be supplied either from stocks or from new production, contemplated withdrawals from crude oil stocks must be deducted from the bureau's estimate of demand to determine the amount of new crude to be produced.

TABLE 1—ESTIMATED DAILY AVERAGE CRUDE OIL DEMAND BY STATES

State—	Forecast— Oct., 1938	Forecast— Sept., 1938	Actual demand Oct., 1937
Texas	1,359,000	1,398,600	1,400,000
California	619,000	638,300	719,000
Oklahoma	523,600	528,300	610,000
Louisiana	248,400	255,300	258,000
Kansas	163,400	168,000	202,000
New Mexico	109,200	111,600	109,000
Wyoming	69,700	65,600	56,000
Arkansas	54,100	53,700	48,000
Michigan	53,900	57,000	60,000
Illinois	51,900	49,000	28,000
Pennsylvania	44,300	47,800	55,000
Kentucky	16,100	16,000	16,000
New York	14,300	14,800	15,000
Montana	13,800	14,000	10,000
West Virginia	10,100	9,900	15,000
Ohio	9,100	9,200	6,000
Colorado	4,300	4,600	3,000
Indiana	2,600	2,600	2,000
Total	3,366,800	3,444,300	3,612,000

the OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

Published weekly by The Petroleum Publishing Company at Tulsa, Oklahoma

"Fall Blues"

There is considerable evidence that the refining industry is experiencing its usual "fall blues," convinced apparently that it cannot hope to improve its situation until another gasoline season opens, with the result that many have been willing to sacrifice prices in order to secure movement of products.

General quotations have been lowered on several products, notably gasoline, so that there has been a further reduction in the operating margins to which the manufacturing branch of the industry is entitled.

In this connection a lot has been said about excessive stocks. It is true that present refinery inventories of finished products are more than 40,000,000 barrels above those of a year ago.

These figures, however, lose a large part of their supposed significance when they are properly analyzed.

Of that 40,000,000 barrels, approximately 80 per cent is accounted for by the 33,000,000 barrels of additional stocks of fuel oil and gas oil. And of this additional fuel oil and gas oil inventory 26,000,000 barrels are due to the increase in stocks in California.

Thus two-thirds of our increased refinery inventories are explained by the additional stocks of heavy oils found in one refining area. These California inventories reflect the loss of markets in the Far East and decreased marine and industrial activity on the West Coast.

This situation has been largely local in its marketing significance and is not responsible for several of the market developments in other sections of the country.

So far as the remaining refining areas are concerned it cannot be said that inventories of any products justify a panicky attitude of sellers accompanied by promiscuous dumping of products.

The demand outlook on the whole continues favorable.

Latest reports show that refiners and producers in this country are holding better than 98 per cent of last year's market, which was the greatest in history.

This comparative situation may not remain as favorable for the remainder of the year, but, when the full year's figures are available the petroleum industry will not have suffered any substantial loss in business for any product, except possibly residual oils. A business recovery this fall and winter will reverse the trend in these heavy products.

For those who are required to look six months or a year in advance the outlook for 1939 is not alarming; certainly not when compared with those industries which have seen their business decline 25 or 75 per cent with no hope of immediate improvement.

A 25 per cent increase in motor vehicle sales predicted by that trade for the 1939 models will mean that domestic consumption of gasoline will approximate this year's level. The demand for the lighter fuels will continue to expand and the industrial lubricating markets will improve.

If refiners will continue to reduce gasoline inventories for the next 30 to 45 days and then increase them conservatively during the fall months, they will have the foundation for a much better gasoline market than they had this year. Market trends should reflect the improvement in the statistical situation before the end of the year.

This level of operation will also bring the needed balance in supply and demand for other products.

The immediate need right now is for refiners to keep their runs in line with seasonal conditions; meanwhile not giving ear to doleful forebodings in less favorably situated industries, but keeping in proper perspective the fundamental conditions which have a bearing upon their own operations.

Programs and Meetings

Final Program for A.G.A. and Natural Gas Department

The final program for the twentieth annual meeting of the American Gas Association at Atlantic City, N. J., October 10-13, has been announced. Among the papers at the general sessions and the sessions of the Natural Gas Department are the following:

GENERAL SESSIONS

Tuesday morning, October 11—10 o'clock:

The Aid of Research to Industry, by Dr. E. R. Weidlein, director, Mellon Institute of Industrial Research, Pittsburgh, Pa.

The Manufacturer's Viewpoint, by Merrill N. Davis, president, Association of Gas Appliance and Equipment Manufacturers, New York.

The Industry and the Association—President's Address, by N. C. McGowen, president, United Gas Pipe Line Co., Shreveport, La.

Executive session—12 noon: Election of company members; election of directors; election of general nominating committee; election of committee on resolutions.

Wednesday morning, October 12—10 o'clock:

Regulation, by Alexander M. Mahood, president, National Association of Railroad and Utilities Commissioners, Charleston, W. Va.

Thursday morning, October 13—10 o'clock:

Opportunities and Responsibilities of the Natural Gas Industry, by Joseph E. Pogue, vice president, Chase National Bank, New York.

NATURAL GAS DEPARTMENT

Monday morning, October 10—9:30 o'clock:

Main Technical and Research Committee, Howell C. Cooper, chairman.

Geophysical Methods of Research, by Dr. J. Brian Eby, consulting geologist, Houston, Tex.

Main Technical and Research Committee round table discussion.

2 o'clock: Address by Robert W. Hendee, Colorado Interstate Gas Co., chairman, Natural Gas Department.

Why Not Eliminate the Waste? by Elmer F. Schmidt, Lone Star Gas Co., Dallas, Tex.

Address by Clyde H. Seavey, acting chairman, Federal Power Commission.

Report of Nominating Committee.

Election of officers.

6 o'clock: Annual meeting and dinner of Executive, Managing and Advisory Committees of the Natural Gas Department.

Prof. Edwin H. Schell, Massachusetts Institute of Technology, will speak during the technical session Tuesday afternoon on "Research and Recovery—Which Comes First?" Other papers at the technical sessions include:

Engineering Significance of the National Bureau of Standards Soil Corrosion Data, by K. H. Logan, National Bureau of Standards, Washington, D. C.

The Metallography and Welding of High Strength Structural Steels, by Dr. W. A. Pearl, Armour Institute of Technology, Chicago, Ill.

Donald R. Richberg to Talk At I.P.A.A. Annual Meeting

More than 1,500 independent oil operators representing every oil-producing state will hear Donald R. Richberg, former NRA administrator, at the annual banquet of the Independent Petroleum Association of America in Tulsa on Friday, October 21. The banquet is the closing feature of the three-day session.

Fourteen committees studying various phases of the association's program dealing with the problems of the domestic petroleum industry will be prepared with reports, it was announced by H. B. Fell, executive vice president, of Ardmore, Okla.

"Problems pertaining to the stabilization of the domestic petroleum industry will be discussed in this three-day session," Mr. Fell said. "These problems include the equitable allocation of the total domestic production among all of the oil-producing states, equitable allocations between pools in the the states, ratable takings of oil from all wells within a common source of supply, balancing of supply with market demand, and elimination of unnecessary and unprofitable drilling."

The executive officers of the association are: Charles F. Roeser, Fort Worth, Tex., president; H. B. Fell, Ardmore, Okla., executive vice president; Russell B. Brown, Washington, D. C., general counsel; T. J. Steuart, Washington, D. C., assistant to the president; C. E. Buchner, Tulsa, executive manager; and Charles Van Vleck, Oklahoma City, Okla., field manager.

Asphalt Meeting Date Changed From Feb. 20 to 27

The twelfth National Asphalt Conference will be held in Los Angeles during the week of February 27 instead of the week of February 20.

The meeting, which will be under the auspices of the Asphalt Institute, will be presided over by Joseph W. Helm, president of the Asphalt Institute and manager of the asphalt department of Standard Oil Co. of New Jersey. J. E. Pennybacker, managing director of the institute, will serve as general chairman, with Daniel Miller, of the West Coast branch, acting as co-chairman.

The conference theme will be "20 Years of Progress." Agenda, exhibits, and speakers including highway officials, engineers and industry members will point up the fact that 1939 marks the twentieth anniversary of federal aid for highways.

The conference will stress the importance of balanced highway programs and special studies will also include soil stabilization, flood control, harbor protection, airport surfacing and highway sidewalks. Officials from the U. S. Bureau of Public Roads are expected to contribute to the discussion, in addition to engineers from the U. S. Army Engineering Corps.

Nineteenth Annual Meeting American Welding Society

The nineteenth annual meeting of the American Welding Society will be held in Detroit October 16 to 21 in conjunction with the Metal Congress and Exposition. The technical sessions will be held at the Book-Cadillac Hotel; 47 technical papers are scheduled, including the welding of piping, pressure vessels, structural steel, production welding of small machine parts, welding of alloy steels, nonferrous metals, brazing, oxygen-cutting, flame-hardening, machinery construction, ship welding, railroad welding and automotive welding. Special sessions will feature fundamental and industrial research.

The meeting will open with a president's reception Sunday afternoon, October 16. The technical sessions begin Monday, October 17. Awards will be made of the Lincoln Gold Medal and the Samuel Wylie Miller Memorial Medal. The program is to conclude with a business session on Friday, October 21. The annual dinner will be held Thursday evening, October 20.

CALENDAR

September

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS, midyear meeting, under direction of West Texas Geological Society, El Paso, Tex., Sept. 27-Oct. 2.

October

NATIONAL LUBRICATING GREASE INSTITUTE, Chicago, Oct. 3-4.

AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS, Petroleum Division, San Antonio, Tex., Oct. 5-7.

SOCIETY OF AUTOMOTIVE ENGINEERS, National Regional Fuels and Lubricants meeting, Tulsa, Oct. 6-7.

AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS, Minerals Division, Knoxville, Tenn., Oct. 6-8.

NATIONAL BITUMINOUS CONFERENCE, sponsored by W.P.R.A. and Montana and Mississippi Highway Department, Biloxi, Miss., Edgewater Beach Hotel, Oct. 10-13.

AMERICAN GAS ASSOCIATION, Atlantic City, N. J., Oct. 10-14.

NORTH AMERICAN GASOLINE TAX CONFERENCE, Tulsa, Oct. 10-14.

NATIONAL SAFETY CONGRESS, Chicago, Stevens Hotel, Oct. 10-14.

SOCIETY OF AUTOMOTIVE ENGINEERS, Aircraft Production meeting, Los Angeles, Ambassador Hotel, Oct. 13-15.

NATIONAL STRIPPER WELL ASSOCIATION, TULSA, Oct. 18.

INDEPENDENT PETROLEUM ASSOCIATION, Tulsa, Oct. 19-21.

AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS, Minerals and Petroleum divisions, Los Angeles, Oct. 20-21.

NATIONAL ASSOCIATION OF CREDIT MEN, Petroleum Refiners Division, Indianapolis, Ind., Oct. 24-26.

NATIONAL PETROLEUM ASSOCIATION, Department of Fire and Accident Prevention, Olean, N. Y., Oct. 26.

MID-CONTINENT OIL AND GAS ASSOCIATION, Texas Division, San Antonio, Oct. 27-29.

November

AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS, regional meeting, Tucson, Ariz., Nov. 1-5.

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS, Pacific Section, Los Angeles, Nov. 3-4.

AMERICAN PETROLEUM INSTITUTE, annual meeting, Chicago, Stevens Hotel, Nov. 14-18.

December

AMERICAN SOCIETY OF MECHANICAL ENGINEERS, New York, Dec. 5-9.

February, 1939

NATIONAL ASPHALT CONFERENCE, Los Angeles, Calif., week of February 27.

March

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS, annual meeting, Oklahoma City, Okla., March 22-24.

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STATE CAPITALS

TEXAS

INJUNCTION AGAINST PRODUCERS in the La Blanca gas field of Hidalgo County to restrain them from violating the gas production law was refused the state last week by District Judge Ralph Yarborough. The attorney general's department had sought the injunction without the consent of the Railroad Commission of Texas, which had authorized operations of the wells so long as the wild well in the field was uncontrolled. Defendants included Atlantic Refining Co., Gulf States Oil Co., McCollum Exploration Co., and Pantano Petroleum Co.

FIELD RULES FOR THE FITZSIMMONS field of Duval County were issued by the Railroad Commission of Texas last week. The spacing rule calls for wells to be drilled 660 feet apart and 330 feet from lease lines; proration to be on a 50 per cent acreage and 50 per cent per well basis with an acreage tolerance of 7 acres. The field allowable is to be divided on the 50-50 basis after deductions have been made for wells incapable of making their allowable. The casing program calls for 500 feet of surface casing tested to 1,000 pounds pressure and cemented to the surface. The producing string is to be tested to 1,700 pounds and fittings to 2,000 pounds. Sufficient cement must be used to fill the annular space behind the casing to at least 3,300 feet below the surface.

LOUISIANA

DEPARTMENT OF CONSERVATION has fixed the allowable production of Louisiana during October at an average of 260,470 bbls. per day, an increase over the September allowable of only 210 bbls. per day. The South Louisiana (Gulf Coast) fields are allowed 193,470 bbls. and North Louisiana 67,000 bbls.

LOUISIANA DEPARTMENT OF CONSERVATION has called a hearing at Baton Rouge on September 29, to amend the order of the Cotton Valley field, in Webster Parish, and to consider rules and regulations for developing the Shongallo deep field, and the Carterville area of Webster and Bossier parishes.

The hearing will be of particular interest to Cotton Valley operators, since some new rules must be made to control production of oil in the Bodcaw and "D" sands of the lower Marine. The field has been prorated as a gas field, with the distillate production dependent on the allowable gas. The production of oil on the flanks of the field bring into the picture the need for oil proration, and an equitable arrangement for making the oil gas gas proration work together.

ARKANSAS

ARKANSAS BOARD OF CONSERVATION issued an order September 23, providing for a graduated cut back of Schuler field production. The total daily allowable was reduced on September 23 from 23,000 bbls. to 19,000 bbls., and on October 1, it will be further decreased to 16,000 bbls. daily. The cut was made necessary by a rapid decline in reservoir pressure in the Jones sand over the past month.

A special order, dated September 29, calls for an investigation by the Board of Conservation, of production practices and reservoir conditions in the South Miller County extension of the Rodessa field. The order provides for a seven-day shutdown of all oil wells in the field, to allow board engineers to study the reservoir and to determine pressure averages and differentials. The possibility of repressuring the field will be studied also.

There was no change made in the yield of producers in the Buckner, Village or Magnolia areas, from 200 bbls. daily. The allowable of the Miller County side of the Rodessa field was also left unchanged at a maximum of 100 bbls. per well per day.

KANSAS

ALLOWABLE PRODUCTION of Kansas' oil fields in October has been established at 163,400 bbls. by the state Corporation Commission, or 1,600 bbls. below the September allowable.

CALIFORNIA

THE CENTRAL COMMITTEE of California Oil Producers were scheduled to meet in Los Angeles this mid-week to make recommendations of allowable production in the state in October. A reduction in the allowable would ease up conditions later in the winter season when demand is lower. Operators started a month or two ago to slow up drilling operations and this policy is becoming manifested in several ways. A smaller number of completions make it easier for Umpire Pemberton to allocate the allowable and this in turn makes it easier for operators to regulate production, because the new production added each month must be allocated back among the older wells and fields and this pyramiding tends to weaken the entire curtailment structure. More stringent curtailment was expected to be made in the Rosecrans and Montebello fields partly due to the mutual cooperation of producers themselves. Line wells in the Rosecrans field are flowing at the rate of 800 bbls. per day which is too far out of line to justify the use of the term curtailment. It is probable that if operators fail to curtail their own production state officials will eventually step in and proceed to enforce the California Gas Conservation Act which will severely reduce production of both crude oil and natural gas.

OKLAHOMA

THE ALLOWABLE PRODUCTION of Oklahoma in October will not be established until September 30. The Oklahoma Corporation Commission postponed its hearing from September 27 because of the meeting of governors of 14 states being held in Oklahoma this week.

AMERADA PETROLEUM CORP. has been granted permission by the Corporation Commission to use the water drive, or water-flooding method, of repressuring leases in the Stillwater pool in Payne County. Amerada operates leases in the north half of the southwest quarter and south half of the southwest quarter of Section 28-19-3, southeast quarter of Section 28, northeast quarter of Section 33, west half of northwest quarter and east half of the northwest quarter of Section 34, all in Township 19n-3e. The leases are owned by Gulf Oil Corp., Stanolind Oil & Gas Co., H. F. Wilcox Oil Co. and Amerada Petroleum Corp., and operated by the last named company. Six wells have been drilled into the common source of supply at an approximate depth of 4,300 feet. Two of these have been plugged and a third, No. 1 Gassaway, produces only salt water. The production of the three remaining wells has declined to such an extent that some other method must be used in their operation. The Amerada company proposes to use No. 1 Gassaway in Section 33-19-3 as an input well.

MICHIGAN

SOUTHWESTERN MICHIGAN POOLS, particularly the Overisel and Bloomingdale pools, are potentially productive beyond the capacity of the pipe lines and have been prorated to a total of 8,500 bbls. per day. Of this quantity Overisel and Bloomingdale are allowed 6,100 bbls. a day.

Acme

State capitol, Harrisburg, Pennsylvania

Vacuum Most Active New Mexico Field

By D. H. STORMONT

FORT WORTH, Tex., Sept. 26.—Interest in the southeastern New Mexico area is largely focused on the Vacuum field following the recent completion of substantial extensions and staking of new outposts. The field was extended 2¼ miles to the east and 1 mile south from the northeast extension area earlier this month when Phillips Petroleum Co. completed its No. 7 Santa Fe. This well, in C SE SW Section 27-17-35, topped the pay at 4,380 feet and flowed 208 bbls. in five hours through tubing at a total depth of 4,610 feet. Helmerich & Payne and Continental Oil Co. last week drilled plug on their No. 1 G-36 State and assured the extension of the field 2 miles further to the southeast. The well flowed 72 bbls. of oil in 18 hours by heads through 5½-inch casing.

The latter test, in C NW SW Section 36-17-35, had been running some 250 feet lower on all markers than the Phillips well, indicating it might define the east limits of the field. Production, however, was forecast when the well began flowing while pulling drill pipe after an 18-minute drill-stem test from 4,790 to 4,920 feet. When the pressure became equalized the flow of oil subsided and it was shut in to await arrival of 5½-inch casing. This was cemented at 4,863 feet and was drilled in last week-end. Production is said to be coming from lime near the bottom of the hole, although some observers thought the sweet, 40-gravity oil might be coming from a sand. Gravity of the oil is somewhat higher than that of the pool, which runs from 35 to 39 degrees A.P.I.

These two wells opened up a semiproven area of some eight sections, a substantial portion of which will have to be tested within the next six months to meet lease expirations.

Semiproven Area Opened

Most recent development in the field was the staking of location for Texas Co. No. 1 Lodewick, in SW SW Section 34-18-33. This wildcat is 9¼ miles southwest of the pool proper, and 4½ miles south and one-half mile east of Texas Co. No. 1 Corbin, which came in for 43 bbls. in eight hours, pumping. Another important test is the Shell No. 1-U State. This test is in the nature of a link well as it is 1½ miles south of Phillips No. 7 Santa Fe, one-half mile south and 1¾ miles west of Helmerich & Payne-Continental well, and 2½ miles east of the farthest southeast pool producer.

In the northwest extension area of the pool Continental Oil Co. No. 2-1-7 State last week-end was running shot after bailing dry following acid treatment. The test is bottomed at 4,985 feet in lime and has shown for a small producer. This test is a quarter-mile southwest outpost to Repollo Oil Co. No. 1,197 State, 4-mile northwest extension, which was completed for 286 bbls. in 12 hours.

To the southeast 2½ miles another link test is being drilled by Ohio Oil Co. and is being closely watched. This test, No. 1 Bridges, is in Section 20 and is some 2 miles west of the pool proper and 1¾ miles northwest of Texas Co. No. 2-D State, western outpost of the field.

The present semiproven area is approximately 14,000 to 16,000 acres and the probable area is believed by many operators to exceed 20,000 to 25,000 acres. The field has been defined, 4 miles south and slightly west by a dry hole; on the southeast 1½ miles from production another test was dry; and on the northwest some 2½ miles from the discovery a dry hole has been drilled.

Status of Drilling

As in all New Mexico fields, wells in the Vacuum pool are spaced on a 40-acre basis, and owing to the present proration which allocates only 40-acre units, there is no incentive to drill more than one well to a tract. Most of the present drilling is required to fill contracts on leases near expiration and on properties demanding offset production. With the present wide spacing little interference is noted between wells. At present 21 wells are drilling in Vacuum with 3 active locations, out of New Mexico's 195 drilling wells. All wells are easily producing the top allowable of 57 bbls. daily and all but four are flowing.

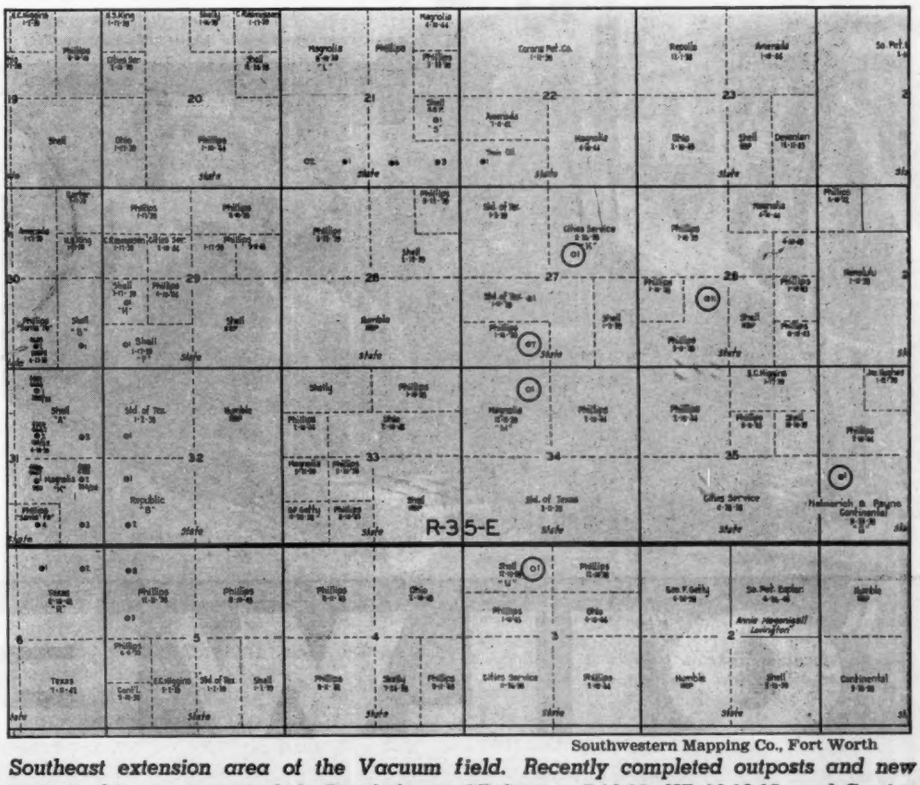
Structure of the pool has not been definitely defined, nor has the general trend been generally accepted, but it is believed to occur in the form of an elongated anticline, on the south flank of the major Maljamar anticlinal feature trending northwest and southeast. Production occurs irregularly through a 100- to 125-foot section in the white lime or oolitic portion of the Permian. The section from the top of the Yates sand downward 1,000 feet consists mainly of alternate stringers or beds of anhydrite, sand and a few dolomite stringers. At the base of this section is a sand break, variable in its development but persistent over the field, which in some sections contains appreciable free gas. The 400 feet below this dolomite is sand and anhydrite, the section varying greatly, depending on the structural position, and is known as the base of the Evaporite series.

From the base of the Evaporite series the section is mainly dolomite, the upper 350 feet being a sandy lime section. Immediately below the sandy lime section, the brown lime section becomes more crystalline and lighter in color, grading into the pay. The pay section is practically all dolomite with pay zones of varying thickness and porosity. Occurrence of pay is not as uniform as in the Hobbs field, the pay zones being lenticular and porosity is the main factor responsible for the size of wells.

From 25 to 40 days are required to drill to the 4,600-foot pay and cost of drilling and equipping the wells varies from $40,000 to $50,000 per well. Types of casing programs used in the field are as follows:

Program A—	Pipe	Approx. depth	Cement
Surface string	10¾	250	175
Intermediate string	7⅝	1,600	250
Oil string	5½	4,200	250
Program B—			
Surface string	7⅝	800 or 1,600	300
Oil string	5½	4,200	250

The intermediate string, set at the base of the salt section, is being eliminated in most of the present wells. This necessitates a close check on the condition of the drilling fluid through and below this section. Most wells have been rotary completions, although the earlier wells were drilled-in with cable tools after using rotary to set the pay string.

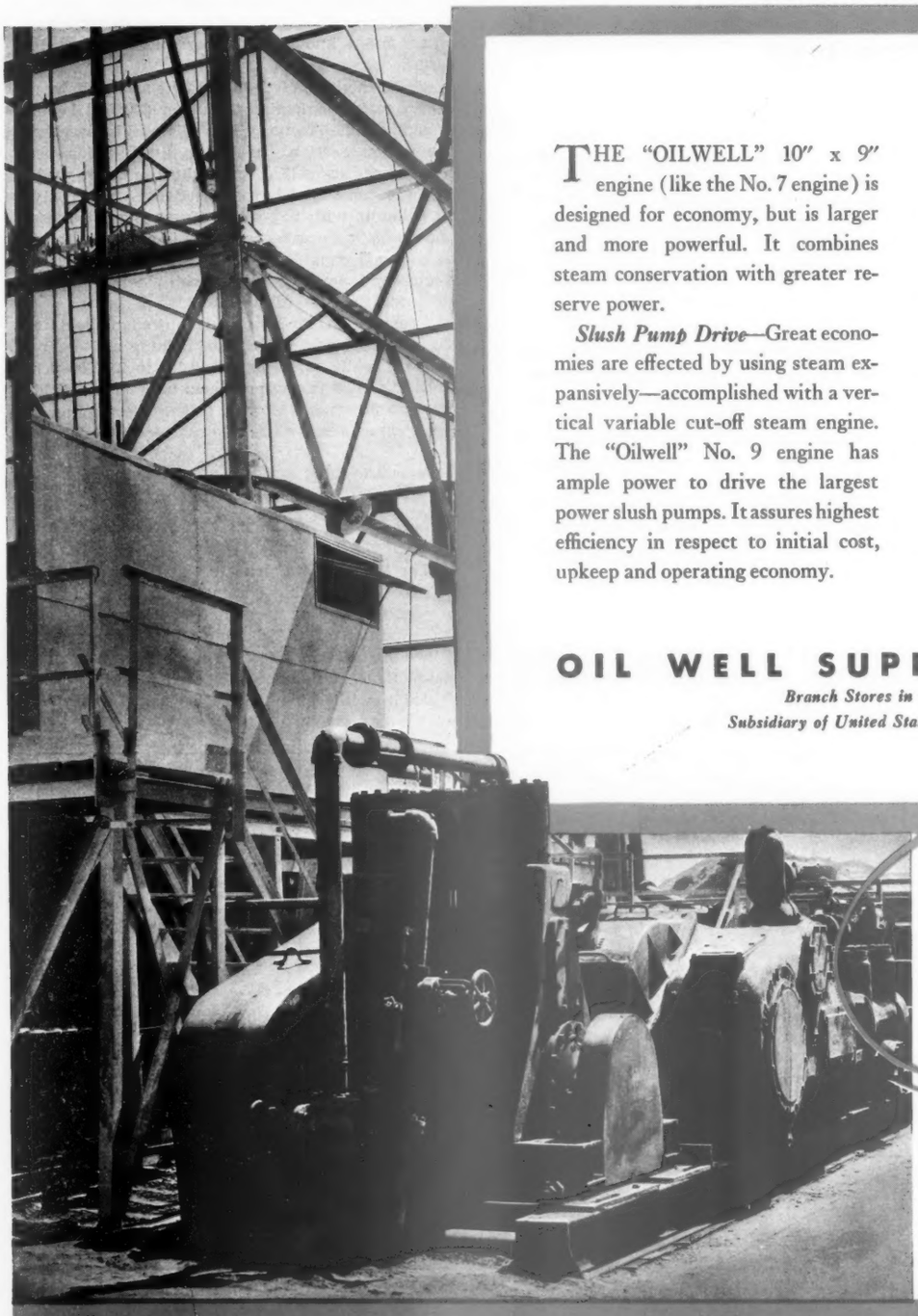


Southwestern Mapping Co., Fort Worth

Southeast extension area of the Vacuum field. Recently completed outposts and new tests in this area are circled. Dry holes in SE Section 7-18-35, NE 16-18-35, and Section 12-18-35, the southern limits.

More Power *plus* Greater Economy

WITH "OILWELL" No. 9 VERTICAL STEAM ENGINE



THE "OILWELL" 10" x 9" engine (like the No. 7 engine) is designed for economy, but is larger and more powerful. It combines steam conservation with greater reserve power.

Slush Pump Drive—Great economies are effected by using steam expansively—accomplished with a vertical variable cut-off steam engine. The "Oilwell" No. 9 engine has ample power to drive the largest power slush pumps. It assures highest efficiency in respect to initial cost, upkeep and operating economy.

Hoisting and Drilling — The "Oilwell" No. 9 unitized double engine drive gives unequalled performance in hoisting heavy drill pipe loads—for medium duty, only one engine is required. For drilling, this hookup also provides the economy of driving pump and rotary independently with variable cut-off engines.

Direct Rotary Drive—The No. 9 engine has ample power and maximum flexibility to drive the rotary table under the severest deep test load conditions.

Send for our new Bulletin No. 182.

OIL WELL SUPPLY COMPANY

Branch Stores in all Oil Fields

Subsidiary of United States Steel Corporation

INSIST ON OVER-ALL ECONOMY

GET IT WITH THE "OILWELL" NO. 9 VERTICAL TWIN STEAM ENGINE

This powerful equipment—the "Oilwell" No. 9 Vertical Steam Engine driving the "Oilwell" No. 20-P (7¼" x 20") Power Slush Pump—is easily meeting every requirement in the deepest drilling, at Wasco, California.

"OILWELL"

Compact Must Justify Existence Chairman Thompson Asserts

AUSTIN, Tex.—Col. Ernest O. Thompson, chairman of the Interstate Oil Compact Commission and of the Texas Railroad Commission, made public the following statement on the eve of the compact meeting in Tulsa September 29:

Institutions must continue to justify their existence at the bar of public opinion. Proration and conservation of oil has become an institution in our economic life in Texas.

The Interstate Oil Compact has now been in legal existence nearly four years. It is an example of what states can do by common council and free exchange of ideas on the question of preventing actual physical waste in oil production.

We have progressed far in the science of producing oil and have learned how to prevent actual physical waste in the production of oil. The public has benefited by the fact that this modern necessity has been conserved and not wasted. The compact was born out of a desire to prevent actual physical waste in the production of a great irreplaceable natural resource—oil.

When we prevent physical waste we have done all that the compact permits us to do in this common endeavor for the benefit of the public.

It is complained by some that the compact has no power—that it has no teeth in it—that it cannot compel any state to do anything. All this is true. But the state authorities, the governors and their representatives, have come together under congressional consent by authority of the legislatures of the several sovereign states and frankly talked over their production problems with the sole aim of preventing waste. The oil production problem has largely been met so far as waste is concerned.

There has been no regimentation—the treaty forbids it. There has been no attempt at compulsion—state sovereignty does not permit it. A sovereign state would not be such if it could be coerced or ordered to do anything.

Here is one instance of regulation which though light and without power depends solely upon the action of each state under its own laws. Some have more stringent laws than others.

The Connally Law simply says that oil produced contrary to state law cannot move in interstate commerce. The federal Government simply cooperates to that extent in assisting the states where oil actually moves across state lines or in foreign commerce.

In some states the allowable production is much higher than in others. Some are more favorably situated with regard to markets than others. There is nothing new in this. It has ever been that way in all lines of business and properly so. Those most favorably located to the markets get the business. The public benefits thereby.

It is not desirable by rule or law to endeavor to equalize opportunities under the guise of preventing actual physical waste when so doing takes from one locality and gives to another its rightful market. For example, it would not be right for Texas to ask Illinois to cut down their production in order to let Texas crude or crude products move into Chicago if the Illinois fields could supply that market without causing preventable waste in its production of that oil in Illinois. For Texas to ask that would be foolish. We do not ask it.

By the same token other states, of course, cannot rightfully ask Texas to refrain from supplying her rightful markets, so long as Texas fields can supply them without causing physical waste in that producing of the oil necessary to meet the demands for Texas crude oil or the products of petroleum.

The expansion of administrative law by boards and commissions has been little short of phenomenal and amazing. But in our administrative zeal we should never overlook our *prime* and *only* purpose of preventing physical waste in oil regulation.

Those who desire guaranteed profits might urge us to have tighter and tighter control and greater limitation of production, but that is not within our charter, nor should it ever be in our power. The oil business is not yet a public utility. Anybody can get into it. This is evident by the fact that in Texas today we have 2,000 more independent operators than we had a few years ago. More are going into the oil producing business in Texas every day. It is an open field; it must be kept open.

Convenience and necessity permits are not yet required for the drilling of wells. The granting of permits is required to prevent actual physical waste—to assure the consumer that none of this irreplaceable natural resource will be left underground never to be recovered. It is *absolutely essential* that we keep in mind that we are to prevent waste of oil and gas, nothing more. We must not consider that we are set up to divide up the oil of the nation or that we are experts and know what is best for the country. We are to prevent physical waste of oil if we can find the ways to do it. In this we have been successful. There is a minimum of waste occurring in the production of oil in this country. Our oil is not being wasted.

In 1925 there were only 5,000,000,000 bbls. of oil in discovered producing fields of America. That was all the oil we knew about certainly. It was all that had positively been proven by the drill.

Since then we have used about 15,000,000,000 bbls., and yet modern science of discovery and production has made it possible for us to have today in reserve in producing oil fields about 13,000,000,000 bbls. ready to be used as needed. So there is no cause for alarm. Instead of running short we are building up tremendous reserves of oil. Thirty-six new fields have already been discovered in Texas alone in 1938.

I quote from "The Limitations of the Expert":

"We must ceaselessly remember that no body of experts is wise enough or good enough to be charged with the destiny of mankind. Just because they are experts, the whole of life is for them in constant danger of being sacrificed to a part, and they are saved from disaster only by the need of deference to the plain man's common sense."

It has been said that an expert is just a man away from home. The further away from home he is the more expert he is supposed to be.

We always need to put a brake on the expert. Otherwise he might be like the modern automobile turned loose without brakes on a crowded street. Let's use our experts to show us how to prevent physical waste and stop at that in oil regulation.

When we regulate to the exclusive end of preventing waste, we shall have done all that was ever contemplated by the public for whom and for whom only is the law truly passed and kept on the statute books of Texas.

Those who think otherwise would do well to read again the arguments used to get the Texas Legislautre to pass the conservation laws.

Obituaries

WILLIAM J. McLAUGHLIN, former Wyoming oil operator, died recently at his home in Denver, Colo.

ORMOND BEACH, 27, was killed on September 21 at Sarnia, Ontario. He was a native of Ponca City, Okla.

EDWIN NESBITT KETCHUM, JR., 57, died in Ponca City, Okla., following an operation.

J. FLETCHER FARRELL, vice president, treasurer and director, Consolidated Oil Corp., died in New York September 25. He was also a vice president and director of Mexican Sinclair Petroleum Corp.; Sinclair Navigation Co.; Pierce Oil Co., S. A.; vice president of Sinclair Cuba Oil Co.; and director of Merchants & Manufacturers Securities Co., Domestic Finance Corp. and Continental Illinois National Bank & Trust Co., Chicago. He was born in Madison, Mo., August 19, 1878. He became associated with H. F. Sinclair in April, 1916, as a director of Sinclair Oil & Refining Co. and in August, 1916, was elected vice president and treasurer. In 1930, when Sinclair Consolidated Oil Corp. took over Prairie Oil Co. and Prairie Pipe Co. he was elected vice president, treasurer and director of Consolidated Oil Corp.

CHARLES MONG, 68, Greene County, Pennsylvania, oil operator, died in Waynesburg, Pa. He had been active in the Greene County oil development for 25 years.

J. R. DILLARD, 72, Wichita Falls, Tex., died September 21, following a heart attack. Born in Fairfield, Freestone County, he had followed oil development from Corsicana to Wichita County.

CARL L. PFEIFER, treasurer of Chain Belt Co., Milwaukee, Wis., died suddenly in Philadelphia, Pa. He was born in Chicago in 1880. In 1914 he was employed by Chain Belt Co. as comptroller after leaving the employ of Arthur Young & Co., and in 1916 was elected treasurer.

THOMAS GRIFFIN, 69, pipe department foreman at the Baytown Humble refinery, died last week. A native of Sheldon, Iowa, Mr. Griffin had been an employe of the Humble refinery at Baytown, Tex., since 1920.

THE MARKETS*

CRUDE OIL: *Reductions in crude oil prices applying to a large part of the Illinois basin production lower schedules to the point where they are now on a parity with Mid-Continent crudes of the same grade. The reductions reflect a rapidly increasing production which available outlets have not been able to absorb quickly. Purchases by small refiners under the posted schedules have been reported since the first of the month.*

REFINERY: *Most of the refining centers report weakness in one or more products. Weakness in refinery gasolines and natural gasolines is general for both export and domestic shipment. Furnace oils are in demand at firm prices. Several refining areas report weakness in heavy fuels.*

TANK-WAGON AND POSTED DEALER: *While there were no general changes either up or down, all grades of gasoline were reduced at several points. Price-cutting in most consuming centers is confined to the third grade.*

FINANCIAL: *Common oil stocks mark time with little change from the price ranges of the previous week. Average of 30 representative stocks for week ending September 24: High, 28.27; low, 26.09; close, 26.73. Week ending September 17: High, 23.84; low, 25.89; close, 26.46.*

**Detailed information in market section.*

Retirement and Pension Plan of Continental

Continental Oil Co. announced establishment of a retirement and pension fund for male employes who reach 65, and 60 in the case of women.

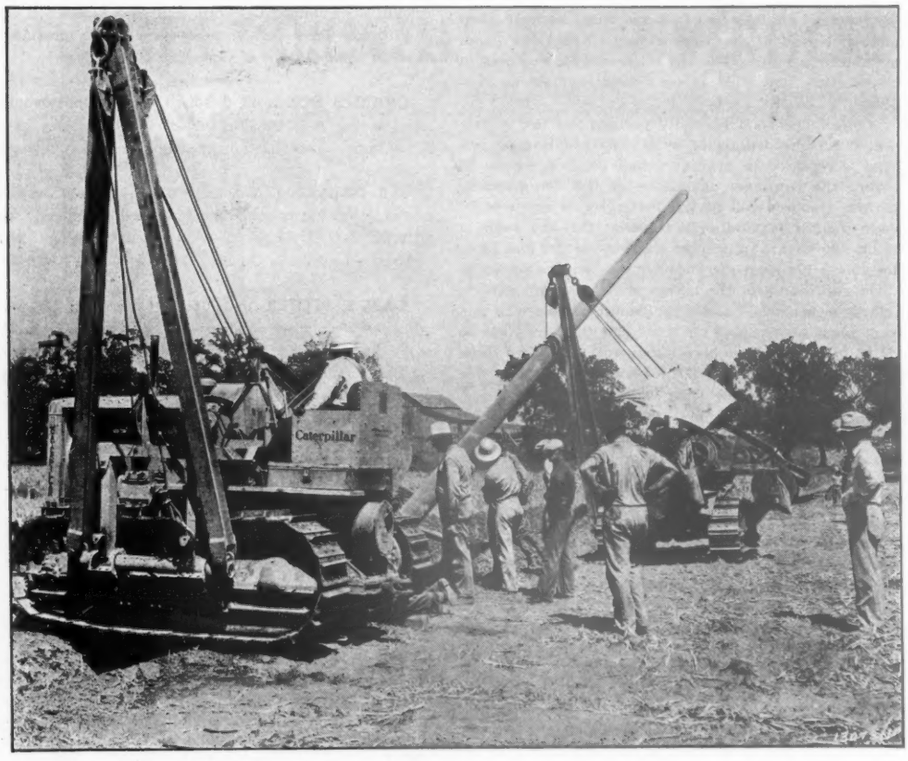
The plan, according to President Dan Moran, will be cooperative, employes making monthly contributions which will be supplemented by a contribution by the company. It will provide a minimum benefit of $30 a month, and in the average case the total retirement income, including federal pension, will amount to somewhere between one-third and one-half of the salary.

For the older employes, the company is providing a benefit in recognition of service already rendered.

Magnetic Storm

Tucson, Ariz., observatory of the U. S. Coast and Geodetic Survey reports a moderate magnetic storm began at 1 a.m. September 26 and ended at 6 p.m. September 26, central standard time.

Pipe Line Activity



Making pipe bend for river crossing; sections of 400 feet are being handled

Panhandle P. & R. and Davis Deal for German Pipe

NEW YORK.—A deal whereby Panhandle Producing & Refining Co. will buy $600,370 of foreign steel from Davis & Co., Inc., 30 Rockefeller Plaza, was disclosed in a listing statement made public by the Stock Exchange.

W. R. Davis heads Davis & Co. Following the confiscation of oil properties in Mexico, it was announced that Mr. Davis had accepted 1,080,000 bbls. of Mexican oil in partial payment for pipe and machinery sent to that country from Germany. Last July it was announced that he had contracted for $10,000,000 of oil to be paid 40 per cent in cash and 60 per cent in commodities, chiefly from Germany.

The listing statement showed that 253,450 Panhandle $1 par common shares were to be issued to further acquisition of tubular steel goods of "foreign origin" having a value on July 30 last in a bonded warehouse in Houston, Tex., of $600,370. Of the shares to be issued, Davis & Co., Inc., would receive 235,439 and L. S. Carter & Co., Inc., of 52 Wall Street, would receive 18,011 as broker in the deal.

The stocks issuable to Davis & Co. will be issued as tubular goods are delivered from time to time, one share for each $2.55 of goods delivered. It is intended about one-half the steel acquired by Panhandle will be used next year.

"The company (Panhandle) having been unable to acquire a quantity of pipe sufficient only to meet its own requirements on terms as advantageous to the company as the terms offered by Davis & Co., Inc. (Davis & Co., Inc., having refused to sell to the company less than $600,000 worth of steel goods), the listing statement related, "the company, in order to avoid overexpansion of its steel inventory has contracted with the Martex Oil Co., a Maryland corporation, to resell to it $300,000 worth of the steel goods to be acquired, at prices identical with prices paid by the company."

As a result of the transaction, Panhandle will show an increase in inventory of $600.370, an increase in capital of $253,450, and an increase in capital surplus of $346,920.

Coal Interests Oppose Loan For Mesaba Pipe Line

WASHINGTON, D. C.—The Bituminous Coal Commission supported coal interests of nearly a dozen states in a protest against the proposed pipe line from southwestern Kansas to Minnesota.

"Displacement of coal from these areas," said the commission, "which would follow expansion of natural gas consumption, would deprive railroads of revenue and divert coal to other markets which are already congested."

The coal commission filed a petition with the Reconstruction Finance Corp., opposing the company's application for a loan of $20,000,000.

Uinta Pipe Line Co. Lays Supplemental Gas Line

DENVER, Colo.—Uinta Pipe Line Co. is laying n supplemental gas line between Green River, Wyo., and Coalville, Utah, as a part of the company's main gas carrying system to Salt Lake City and other Utah communities. Contract for the 53-mile 18-inch line was awarded to the S. D. Bechtel Co. of San Francisco. Work on the line started last week and company officials expect to have it completed by November 20. The line will be laid from Coalville to Biglow Hill, 20 miles east of Evanston and then parallel to the main line.

Illinois Commission Cites Gas Pipe Line Company

CHICAGO. — James M. Slattery, chairman of the Illinois Commerce Commission, announced that the commission has filed a petition with the Federal Power Commission requesting it to cite Natural Gas Pipe Line Co. of America and the Texoma Natural Gas Co. to show cause why rates for natural gas sold to the Chicago District Pipe Line Co. and other Illinois utilities should not be reduced.

The Illinois commission alleged that rates charged Chicago District Pipe Line, a subsidiary of Peoples Gas, Light & Coke Co., are unjust and unreasonable and declared that the fixing of fair rates will aid the state commission in fixing reasonable rates for gas sold to ultimate consumers in Illinois.

Natural Gas

Columbia-Panhandle Eastern Divestment Considered

Divestment of control of the Panhandle Eastern Pipe Line Co. by Columbia Gas & Electric Corp. interests was indicated by disclosure that an investment banking syndicate headed by Glore, Forgan & Co. had offered approximately $12,000,000 to the Columbia Oil & Gasoline Corp. for its 404,000-share interest in Panhandle Eastern. Public distribution of the shares of Panhandle Eastern is contemplated by the syndicate.

Relinquishment of control of Panhandle Eastern by Columbia would end a battle with the Missouri-Kansas Pipe Line Co. over the operation of Panhandle and fit into plans of Columbia Gas for complete integration of its properties under the Public Utility Holding Company Act. Missouri-Kansas Pipe Line (Mokan) owns 324,326 shares of common stock of Panhandle Eastern and has a warrant to buy 80,000 shares additional at $25. Columbia Oil & Gasoline owns 404,326 common shares, sufficient to give control. The 80,000 shares under option to Mokan are in the treasury of Panhandle. There are no shares in the hands of the public.

Auction Board of Trade to Sell Oil and Gas Properties

The first of a series of regular sales of the Auction Board of Trade, a new institution established to auction oil and gas properties, will be held Friday, September 30, on the mezzanine floor of the Mayo Hotel in Tulsa beginning at 10 a.m. Several hundred thousand dollars worth of oil leases, fee lands, royalties, field equipment and other oil and gas properties are listed, according to Earl Sneed, president of Sneed Oil Co. and also of the Auction Board.

Col. E. Walters, who has $178,375,550.58 auction sales to date to his credit, has been employed as auctioneer. The methods and regulations of the auction will conform to those used by the federal Government and the University of Texas in the sale of Indian lands and oil properties, Sneed said.

Oil properties in the first sale's listings are in Oklahoma, Kansas, Texas, Georgia, Louisiana, New Mexico and other petroleum states.

Standard Oil of California Files Elk Hills Appeal

SAN FRANCISCO, Calif.—Standard Oil Co. of California has filed an appeal with the U. S. Circuit Court from a judgment of more than $6,000,000 awarded the federal Government in litigation over Elk Hills oil reserves in Kern County.

Port Authorities to Oppose Federal Tideland Claim

LOS ANGELES, Calif.—Leadership to prevent federal encroachment upon states' rights tideland was taken by the American Association of Port Authorities in its annual convention at Nova Scotia, last week, according to word received by the United Landowners Association from Rush M. Blodget who represented the California oil industry and the landowners organization. The Port Authorities committee on law and legislation was authorized to intervene in any proceedings to oppose claims of federal title.

Refinery Expansion

Danube Installing Vapor Recovery Unit at Borger

AMARILLO, Tex.—Danube Oil Corp., operators of a 400-bbl. skimming plant near Borger, Tex., has started construction of a vapor recovery unit at that plant. The unit will extract the natural gasoline content of refinery vapors, the natural to be blended with straight-run gasoline produced at the plant. Cost of the new unit is estimated at $45,000 and will be in operation in about 30 days.

Southport Ordered to Install Additional Equipment

AUSTIN, Tex.—The Texas Railroad Commission last week ordered Southport Petroleum Co. to install additional equipment in its Kilgore refinery and natural gasoline plants to enable the commission to keep better track of its operations. The commission ordered the installation of a by-pass around the master gas meter on the field casinghead gathering system; an orifice type meter on the vapor line between the stills and the junction with the casinghead line; installation of rundown tanks which could be alternately filled with fuel oil; and installation of separate tanks for measuring finished products. This work is to be done by October 1.

Construction Work Started At British-American Plant

CALGARY, Alberta, Sept. 24.—Work has been commenced on the construction of the new $1,350,000 refinery of the British-American Oil Co. in East Calgary. The initial building permit covering erection of a brick administration building and various improvements to cost $318,000 was secured last week. Calgary utility and public works departments are planning water, power and street alterations to accommodate the plant. Construction work will continue through the fall and winter, and it is expected the plant will be ready to operate by May 1. L. E. Woolley, refineries manager of Toronto, and M. S. Beringer, construction superintendent, are in Calgary in connection with the project.

Modernization of Refinery for Running Healdton Crude

The Ben Franklin Refining Co. is modernizing the plant at Ardmore, Okla., which was purchased from the Wirt Franklin interests through a federal court. After this work has been completed, the refinery will furnish an outlet for 2,000 to 2,500 bbls. daily production of southern Oklahoma crude. Purchase of a 6-inch pipe line from the Healdton Pipe Line Co. has been recently announced. Ownership of the newly organized refining company is divided among W. C. Berry, Dr. Sidney Born, and the Bell Oil & Gas Co.

Arguments in Refinery Process Case Are Presented to Court

Plaintiff's argument has been completed in the suit of the Gray Processes Corp. v. the Danciger Oil & Refining Co.

The suit was brought by the Gray corporation upon the allegation that the Danciger company has infringed upon the patent rights of the processing corporation by employing a patented process for treating cracked gasoline. They ask that the refining company be enjoined from further alleged infringement and that all gains and advantages, assertedly derived from the use of this process, be declared and surrendered.

The counsel for the defense contends that the operation of the Danciger refinery is covered by a previous Gray patent which has now expired and is not involved in the suit. They further claim that the patents involved are invalid as containing no invention which was covered by the original patent or was common knowledge in the industry at the time of application for the patents.

During three days of argument counsel for the plaintiff has sought to show that the patents involved disclose a process which was not covered by the original patent which is now expired. They have also sought to show wherein the patents and publications cited by the defense to show that the principles of the process were common knowledge are irrelevant to the case since they deal with processes which are not related to the petroleum industry.

Minimum Requirements Advocated To Protect Michigan Motorists

DETROIT, Mich.—John B. Strange, State Agricultural Commissioner, advocates a law to set minimum requirements for gasoline, to protect motorists from inferior grades.

Mr. Strange said the proposal grew out of dozens of requests, principally from filling station operators who complained about the quality of gas their competitors were selling during the Detroit price war.

"How long is the public going to sit idly by and get good gas at 5 gallons for $1 and in the next station buy poor gas for the same price?" he asked. "The final outcome of some of these price-slashing policies will be that we will be assured by law that we will get the gas we pay for."

Mr. Strange urged motorists to ask station attendants the rating of gasoline being sold. At present the state has authority only to test gas tanks for capacity.

Operating Problems of Refiners To Be Discussed at Wichita, Kans.

Methods of reducing refiners costs as seen by the engineer and the technologist will be the general subject of the regional technical meeting of the Western Petroleum Refiners Association at the Allis Hotel, Wichita, Kans., Thursday, September 29.

The Wichita meeting is the first of the 1938 meetings arranged by the manufacturing committee of the association and will be followed by a second meeting in Shreveport, La., October 28.

Refiners, constantly seeking penny and fractional-penny reductions per gallon in operating costs will hear discussions of economies made possible by reclaiming and reusing refinery material and equipment, the economies resulting from safety in operations and the economics of cracking fuel oil to coke.

The subject of cracking fuel oil to coke is particularly timely and one which Mid-Continent refiners are facing daily. Creation of additional markets for coke will materially reduce the amount of fuel oil manufactured.

Refiners and plant operators from Kansas, Missouri, and Oklahoma will attend the Wichita meeting and advance reports indicate an attendance which will break last year's record. The program in detail as announced by L. D. Mann, chairman of the manufacturing committee:

Reclaiming Refinery Material, by E. R. Jones, Skelly Oil Co.

Safety Economics Pertaining to Refineries, by Donald J. Wallace, safety engineer, Sinclair Prairie Oil Co.

Economics of Cracking Fuel Oil to Coke, by George B. Murphy, Universal Oil Products Co.

Visit to Wichita refineries.

The meeting will begin at 9:45 a.m.

Coastal Oil Co. Terminal At Port Newark Opened

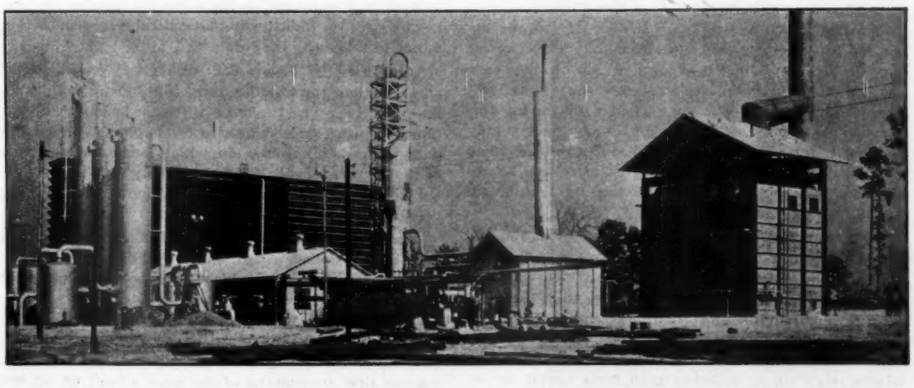
NEW YORK.—The new ocean terminal of the Coastal Oil Co. was opened at Port Newark, N. J. on September 29.

Principals in operation of the company are Wiley H. Butler, formerly with Standard Oil Co. of New Jersey, and Warren C. M. Lessing, formerly worked with Asiatic Petroleum, and Shell. Later he operated with Frontier Oil Corp., of Buffalo, N. Y.

Sinclair Builds Dewaxing Unit at Wellsville, N. Y.

NEW YORK, Sept. 27.—The new benzol-ketone solvent dewaxing plant being built by the Lummus Co. for Sinclair Refining Co. at Wellsville, N. Y., is scheduled for completion during the middle of next January. The dewaxing unit upon which construction was started recently will have a capacity of 3,000 bbls. per day of zero pour test lubricating oil. The new plant will replace equipment destroyed by fire at the Wellsville refinery several weeks ago.

Natural Gasoline



The Miller County, Arkansas, gasoline plant of the East Texas Refining Co., shown during construction. This plant will be operated on gas well production only during the week of oil well shutdowns in the Rodessa extension field

INTERNATIONAL NEWS

Oil Production in Germany Showing Small Decline

Germany's production of crude oil, a subject of keen interest due to militant attitude of the country, showed a small but steady decline during recent months, largely due to a slump in output in the Nienhagen fields. Figures reported to the Bureau of Mines by the American consul at Bremen show that production in the Nienhagen fields decreased by 12,257 bbls. in June as compared with May, but increased by 12,243 bbls., or approximately 6 per cent compared with June, 1937. The production of crude in the Province of Hannover during the first six months of the current year increased by about 12 per cent over that of the corresponding period of the preceding year.

Accordingly, production in the Nienhagen fields increased by approximately 17 per cent, while decreases of about 4 per cent and 17 per cent, respectively, are shown in the Wietze-Steinforde and Eddesse-Oberg field during the same period.

Total production in Germany during the first six months of 1938 amounted to 1,899,450 bbls., as compared with 1,491,588 bbls. during the same months of 1937, an increase of approximately 27 per cent. Hannover fields accounted for about 81 per cent of the total production, as compared with 93 per cent during the first six months of 1937. Production during the first half of 1938 averaged 316,575 bbls. monthly, compared with 264,446 bbls. during the preceding year.

PRODUCTION IN THE PROVINCE OF HANNOVER, FIRST SIX MONTHS 1938 AND 1937

(Figures in barrels)

	Nienhagen	Wietze-Steinforde	Eddesse-Oberg
1938—			
January	208,936	25,039	11,410
February	190,533	23,513	7,392
March	252,483	25,592	11,956
April	244,629	24,584	10,500
May	217,756	25,522	10,493
June	205,499	25,137	11,515
Total	1,319,836	149,387	63,266
Grand total	1,532,489		
1937—			
January	205,282	26,544	12,628
February	175,805	24,647	12,334
March	183,197	25,956	12,859
April	187,292	26,208	12,817
May	187,341	25,879	12,852
June	193,256	26,460	12,887
Total	1,132,173	155,694	76,377
Grand total	1,374,244		

Compared with Germany's consumption of petroleum products, the domestic production constitutes only a very small percentage. During 1937 the consumption of gasoline amounted to approximately 17,500,000 bbls., and it is reported that consumption during the current year would exceed 21,000,000 bbls. The domestic production of synthetic motor fuels is reported to cover approximately 60 per cent of present requirements. Rumania supplies a certain proportion of the oils imported into Germany but the Rumanian Government has placed a quota on oil exports, which compels Germany to draw its supplies from other sources as well. The barter arrangements worked out with Mexico during the past 60 days by which Germany will supply finished industrial goods and newsprint in exchange for confiscated petroleum is expected to relieve her to some extent from outright purchases from Rumania and the United States.

In attempting to establish self-sufficiency as regards petroleum, Germany is using many products obtained by synthetic processes of various nature which would be totally unsuited to military requirements. Many of Germany's public transportation buses, for instance, are operated on gas generated from wood and still others are fueled by high-pressure butane. The nature of containers required for utilizing such fuels would be impractical in war, particularly in airplane operation.

For the reason that Germany is deficient in native sources of high antiknock motor fuel, practically indispensable to operation of high-speed fighting planes, she is generally credited with having designs on Rumania. It is generally expected, according to news dispatches from London, Paris, Prague and Bucharest that Germany's high-geared propaganda machine will be next directed to German minorities in Rumania with the objective of obtaining a somewhat similar settlement involving Rumanian territories in which the population majority is of Germanic origin.

The extent to which Germany is deficient in petroleum is most strikingly reflected by details of its imports for the first half of this year which rose by 256,085 metric tons over 1937, totaling 2,118,314 tons for the six months, roughly 15,000,000 bbls. The increase for 1938 over the first half of 1937 was about 13.8 per cent. Details of imports for the period:

GERMANY'S PETROLEUM IMPORTS

(Figures in metric tons)

	January to June	
	1938	1937
Crude	362,121	298,260
Motor fuel	582,518	463,748
Kerosene	11,707	26,613
Gas oil	606,227	503,856
Lubricating oil	184,863	208,495
Fuel oil	146,593	182,931
Residues	220,050	157,152
Bitumen	4,235	21,174
Total	2,118,314	1,862,229

Venezuela and the United States were Germany's largest sources of petroleum imports. Large declines were reported in imports from Rumania, the U.S.S.R. and Mexico, but this latter country will fare much better during the last half of 1938.

SOURCES OF GERMAN PETROLEUM IMPORTS

(Figures in metric tons)

	January to June	
Country—	1938	1937
Venezuela	1,027,166	644,109
United States	537,220	401,225
Rumania	182,893	359,587
Mexico	89,805	141,787
Netherlands Indies	73,390	48,535
Iran	63,460	35,463
U.S.S.R.	55,855	152,596
Peru	47,969	51,680
Others	40,556	27,247
Total	2,118,314	1,862,229

Rumanian Industry Awaits Revision in Oil Laws

Because of a decline of 324,200 metric tons, about 2,421,800 bbls. in Rumanian oil produced for the first half of 1938 compared to the same six months the preceding year, the industry in that central European nation is not in a healthy condition.

Although the government has given operators assurance that the mining laws and possibly the tax laws will be revised to give a greater incentive to exploratory work the changes are still in process of promulgation. Crude oil production, which forms the backbone of the industry, again fell considerably during the first six months of 1938, and refineries, in consequence, have been compelled still further to curtail their operations.

At the same time, domestic requirements have shown a renewed expansion with the result that considerably smaller quantities of products have been produced for export.

Even more serious from a standpoint of the industry's projected welfare than the decline in production, refining and shipping is the fall in new drilling. During the first six months of the year a total of 161,890 meters was drilled in Rumania, compared with 208,500 meters in the first half of 1937. The decline in drilling activity in the face of expanding domestic consumption indicates inducements are no longer sufficiently attractive in Rumania to keep the industry's reserves in sound condition.

The new deeper horizons proven productive in the Tzientea field have received nearly 30 per cent of the new drilling launched so far this year in Rumania. The fact that operators are producing from the deeper pays in a more conservative fashion than customarily practiced in Rumania may account to a considerable extent for the otherwise apparent serious decline of the country as a source of petroleum.

The large operating companies in Rumania make no secret of the fact that present conditions, principally intolerable rates of taxation and meager government land grants around discoveries, make wildcat drilling necessary to maintain reserves, an impractical matter.

The Supreme Economic Council appointed by the government several months ago to propose specific changes in Rumanian laws for greater security of the country is still working on its suggestions, but it is known much consideration has been given to the oil industry. Since falling from the fourth largest producer of world petroleum three years ago to a position of sixth, and that none too secure, Rumania has had cause to regret its unfriendly attitude toward the oil industry.

Large Flowing Well in Los Manueles Field

Colon Development Co. has completed another large flowing well in the Los Manueles field in Venezuela. The new producer is No. 19 C.M. and its rate of flow was reported by the company at 2,260 bbls. per day through a $\frac{11}{16}$-inch choke. Since reviving its development program last year Colon has completed an average of about one well per month materially adding to its production in Venezuela.

Value of French Oil Imports Almost Doubled This Year

The value of French petroleum and products imports during the half year was almost 2,000,000,000 francs as compared with 1,260,000,000 francs for the same months of 1937. This increased value was due almost entirely to the devaluation of the franc which resulted in higher import costs. Of the total spent for petroleum for the first half of 1938, 1,542,000,000 francs represented crude imports; gasoline, 220,000,000 francs; fuel oil, 79,000,000 francs; lubricating oils, 74,000,000 francs and gas oils, 31,000,000 francs.

Rumania suffered the most serious loss of trade with the French Republic, this year's shipments representing only 3.22 per cent of the total imports while for 1937 it shared to the extent of 8.63 per cent.

FRENCH IMPORTS OF PETROLEUM PRODUCTS

(By countries of origin)

	1937		1938	
	6 mos. (tons)	Value (1,000 francs)	6 mos. (tons)	Value (1,000 francs)
Iraq	1,677,991	440,724	1,507,785	644,688
United States	812,851	361,902	1,362,045	851,920
Venezuela	267,268	72,004	229,725	101,650
Peru	213,879	60,118	191,119	108,947
Colombia	188,961	44,638	144,791	57,269
Rumania	338,027	134,082	123,637	88,399
Iran	82,738	30,599	80,541	35,357
U.S.S.R.	142,798	52,398	56,867	26,699
Ecuador	19,281	8,215	27,558	15,928
Mexico	22,793	10,726	10,712	7,488
Netherland Indies	2,610	1,819	9,534	7,517
Netherlands	3,475	3,333	5,403	7,079
Belgium-Luxemberg	1,521	3,213	560	2,062
Poland	792	1,113	341	492
Argentina	182	108	282	413
Great Britain	359	617	229	563
Germany	194	610	200	1,132
Switzerland	227	96	50	205
Other Central America	72,565	17,575	66,829	26,314
Other foreign	67,229	15,706	20,953	8,878
Total	3,915,741	1,259,596	3,839,161	1,996,540

ENGINEERING and OPERATING

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Garfield County, Oklahoma, has always given trouble to drillers. Rotary rigs for meeting these conditions in the drilling of two wildcats are described, together with an account of difficulties encountered.

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The possibilities of manufacturing natural gasoline by a method providing for the dehydration and cooling of incoming gas are explained with special reference to results obtained at a recently built plant.

SAFETY GUARD AT PULL-ROD SWING ..... *Page 59*

Swings are sometimes a source of danger to employes and others.

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ENGINEERS EXCHANGE USEFUL DATA ON CATHODIC PROTECTION
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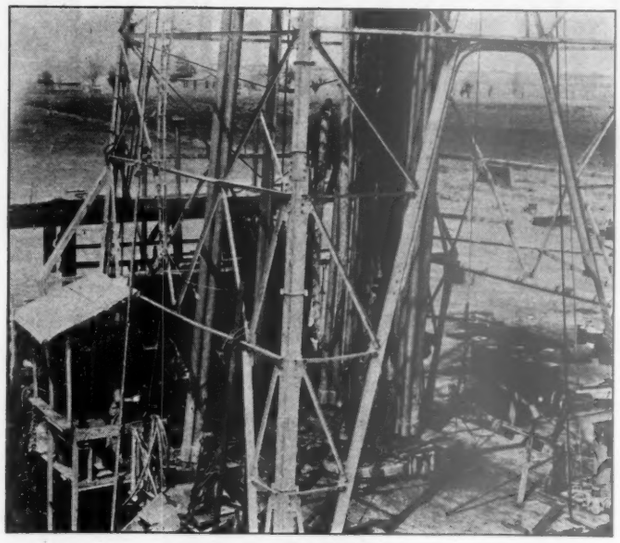
UNUSUAL EQUIPMENT U

TWO WILDCATS I

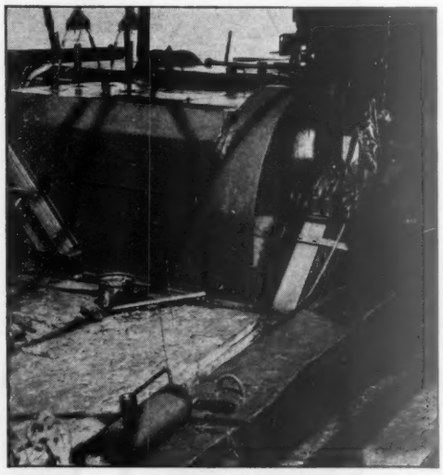
By Harry Simons



Photograph of the floor on the rig of Erle P. Halliburton being used to drill the No. 1 Kitchin, Garfield County wildcat. Driller is at the left facing the control panel with his right hand on the lever which controls the brake on the drawworks drum

Two more attempts are being made to obtain production in Garfield County, Oklahoma, as two wildcat wells reach the lower pay horizons. Both of these wells have experienced the usual luck of wildcats in this area and have encountered numerous difficulties and fishing jobs. Drillers have found that the subsurface structures in this area do not dip steeply and as long as a reasonable amount of weight is run on the bits, little difficulty is had in keeping the holes straight. On the other side of the ledger there is a danger of lost circulation, sticking pipe, and a good crop of fishing jobs due to twist-offs.

For the current wildcats the rigs used are notable, one being the most modern developed and the other being probably the most unusual. Erle P. Halliburton, Inc., is drilling the Indian Territory Illuminating Oil Co. and others No. 1 Kitchin, C SE SE Section 17-22n-5w, with a power driven rotary which has only one chain and three sets of V-belts, two of the latter being used on the pump-drive pulleys. Champlin Oil & Refining Co. has the large Diesel-electric rig of D. J. Oven Drilling Co. on its No. 1 Boehm, SW SW NE Section 4-24n-8w.



The top and front of the four-speed rotary drawworks used on the I.T.I.O. No. 1 Kitchin, Garfield County, Oklahoma. The two sets of springs just above the drawworks help release the brake bands, both of which are located on the left side of the drum instead of having one on each side of the drum like conventional rigs

The Halliburton rig is a severe departure from the conventional rotary rig in that all chains are eliminated, except the rotary drive chain, and all jaw clutches have been replaced by large friction clutches. All clutches are air operated, as is the drum brake on the hoist. Controls for the driller are located on a platform off of the derrick floor.

This rig is powered with two vertical, 300-hp., Waukesha-Hesselman engines using Diesel fuel compounded together with V-belts. Two 18-inch by 7-inch power pumps are operated by V-belts from a jackshaft which is gear driven from the compound shaft. The drawworks drive is through gears located at the derrick end of the compound shaft. The drawworks has four speeds which are obtained by four sets of gears on the gear shaft and line shaft; driving of the line shaft is through individual air-operated friction clutches on each set of gears. Only one air clutch is needed on the hoist drum.

Rotary and Drawworks

The rotary has a four-speed range as it drives through the gear shaft; the rotary clutch and drive sprocket is partially below the floor and the clutch is air-operated.

Because of the space occupied by the drum clutch and gear, both brake flanges are located on the driller's side of the drawworks. The brakes are air-operated while making a trip but for drilling a conventional brake handle is provided. The drawworks is very compact for the amount of machinery it contains; it is completely enclosed, the deck over the gear and line shafts serving as a walkway for the front motor. Motor compound shafts and the compound belts are completely covered by steel decks which make it easy to get to the motors and motor clutches. The rotary drive chain is parallel to the floor and the guard covering it is only 14 inches high. Air compressor and water pump are driven by the compound shaft.

The drawworks is equipped with a hydromatic brake and an automatic cathead; as an aid to the driller, a steel plate about 2 feet in diameter is attached to the end of the drum shaft on the operating side of the rig. The driller can tell how fast the drilling line is spooling from the drum by watching the steel plate turn.

The foundation for the motors is built as a unit with the drawworks, thus assuring perfect alignment of the hoisting machinery. A substructure of 14-inch by 6-inch I-beams sets on concrete sills and provides support for the motors. The two pumps are mounted on a special platform made from two skids of 12-inch by 10-inch I-beams.

The control panel looks very much like the front end of a street car as the air clutches are controlled through small needle valves with horizontal handles. One valve controls all the gear-shaft clutches, a neutral position being provided between each speed. The drum and rotary clutches have a valve each and the brake valve is operated by a short handle on the right side of the panel. Motor gauges are also placed on the control panel but the weight indicator is of the direct reading type clamped to the dead line in the driller's line of vision.

Control of the rig is very simple as these valves operate with the application of a very light hand pressure. The gear-shaft clutch is generally left engaged while making a trip and only the drum-shaft clutch used. The operation is similar to a conventional rig except that it is entirely controlled by hand with the exception of a cathead clutch, which operates through a foot pedal.

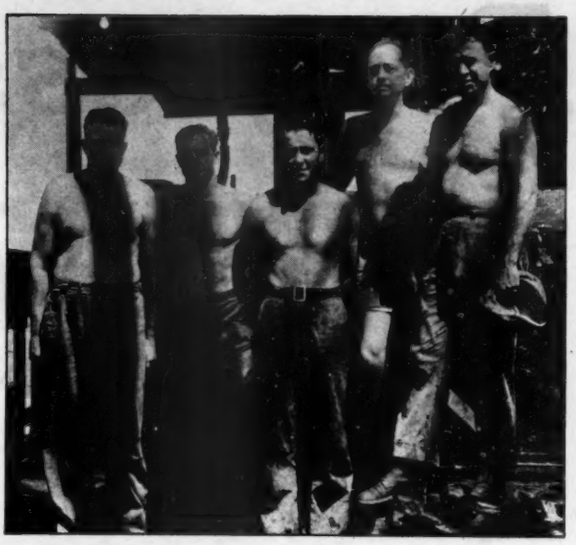
This pin with the foot of drill pipe was in the top of the fish on the I.T.I.O. No. 1 Kitchin, C SE SE Section 17-22n-5w, Garfield County, Oklahoma. Overshot pack-off rubber would not hold and fish stuck due to lack of circulation

However, practically every driller who has operated the rig has bumped the traveling block against the crown at least once because of the ease with which the clutches operate, the most common cause being the "flipping" of the drum-shaft clutch valve to the out position instead of shoving it out. As the valve operates very easily it sometimes bounces back and engages the clutch; if the driller has his attention attracted by something else he may not notice that the drum is spooling the line instead of unspooling.

Speed of this rig is comparable to other large rigs, 6,000 feet of 6⅝-inch drill pipe being pulled and returned to the hole in four hours' time.

D. J. Oven Drilling Co.'s rig being used on the Champlin No. 1 Boehm is a completely modern Diesel-electric rig with only the heaviest equipment used throughout. Two vertical, eight-cylinder, Type VDMB Superior Diesel engines are used to drive the generators; these motors have a 9-inch bore with a 12-inch stroke, and at 600 r.p.m. develop 350 hp. Each motor with its clutch, shaft and V-belt pulley is mounted on a steel skid as a

USED FOR DRILLING IN OKLAHOMA



It was hot weather when this picture of the crew on Erle P. Halliburton's four-speed, gear-driven rotary was taken. They also had just completed shining the drawworks for the photographer's benefit. From left to right: W. W. Montgomery, driller; C. D. Jacobs, L. V. Fowler, Lowe Tice and Bob Davis, helpers

unit. Two direct-current generators with their V-belt pulleys are mounted on one skid. One generator is a 200 K.W., 200 volts at 1,000 amps., at 1,200 r.p.m. The other is a 250 K.W., 200 volts and 1,250 amps., at 1,200 r.p.m. Each generator has an individual exciter. Due to the arrangement of the generators, any combination between motors and generators is possible.

The drawworks is driven by two 200-hp. Westinghouse electric motors, operating at 900 r.p.m. on 810 amps. and 200 volts. Each motor is equipped with a blower for cooling which is driven by a 1-hp. motor. Drive to the drawworks is through a twin reduction gear running on 4-inch shafts

Steel substructure for the motors and drawworks on the No. 1 Kitchin. The rotary clutch and drive sprocket from the gear shaft can be seen just below the floor in the center of the photograph

from the motors. The hoist is of three-shaft design with each 9-inch shaft mounted in roller bearings.

One pump is used for circulating the drilling fluid. It is a C-350 power pump with an 18-inch stroke and 7¾-inch bore which is capable of displacing 770 gallons per minute at 800 pounds pressure. The pump is driven by a 300-hp. Westinghouse electric motor using 200 volts and 1,230 amps. and operating at a speed of 900 r.p.m. All of the derrick equipment is of the heaviest and latest design. Time for making a trip on this rig from 6,000 feet is from three and one-half to four hours.

Both of these rigs have had plenty to test their trip making ability as they have both spent considerable time fishing.

The No. 1 Kitchin started drilling below the surface pipe on June 18 and had three fishing jobs, one of which caused considerable trouble. The first was a simple twist-off and easily recovered, the second was at 5,196 feet and nine stands, a double, drill collar and reamer were left in the hole. The drill pipe twisted off about 12 inches above the pin and this complicated matters for when the overshot slips were in position to hold the pipe, the pack-off rubber would not hold. The fish could not be pulled and circulation around the bit stopped. Use of a Halliburton Oilwell cementing truck to regain circulation was successful and oil was placed in the hole. The overshot's grip was broken several times to replace the pack-off rubber and finally circulation with the Halliburton truck failed. On August 1 a wash-over operation was started with a cutting tool on the bottom of a 9-inch fishing string and an overshot above. Three cuts were made and the fish recovered in a week's time.

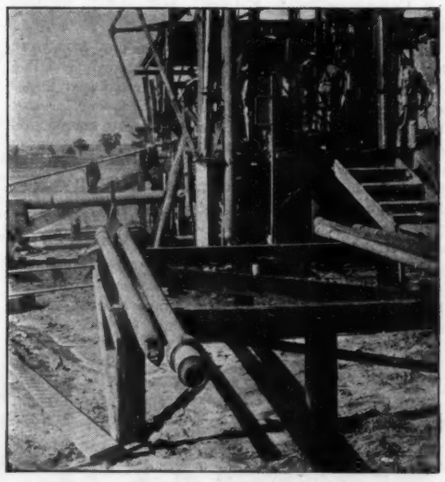
A shutdown of a few days was necessary to recondition the drilling machinery and operations were resumed on August 10 but on the next day circulation was lost and 25,000 pounds of cotton seed hulls and 300 sacks of Aguagel were used to condition the mud. On August 17, while making a connection, the pin broke on the joint being placed in the hole and the pipe dropped to bottom. Catching the fish was easy as it was in the surface pipe but the drill pipe had to be replaced with a new string. Mississippi lime was topped at 6,113 feet, and after passing through Woodford shale and Misener sand and topping Sylvan shale at 6,670 feet, circulation was lost at 6,670 feet on September 22, last report.

Progress of Drilling Delayed

Similar misfortune has dogged the progress on the Champlin No. 1 Boehm which started under the surface pipe set at 255 feet on June 13, and only drilled to a depth of 1,136 feet when the drill pipe stuck. Mud was mixed and washed down beside the pipe which came loose on July 9. Practically all of the formations between 4,000 and 5,000 feet were cored and drilling operations were carried on smoothly for a few days until a depth of 5,230 feet was reached and circulation lost. It was regained by the use of cotton seed hulls.

Because of the depth and wear on drill pipe, operators decided to use a newer string of pipe which they put in the hole at 5,275 feet and a few days later the drilling crews strung up eight lines. Mud was kept at 10.2 pounds and cotton seed hulls used to seal off the formations which were taking the drilling fluid. A depth of 5,935 feet had been reached when the line clamps slipped while making a connection and the drill pipe dropped 30 feet to bottom. The pipe was recovered and a new line strung and drilling resumed with circulation being lost and mud and cotton seed hulls being mixed to cure this trouble. The cotton seed hulls plugged the bit and the drill pipe stuck. When the pipe was finally loosened and pulled it was found that the drill collar had been left in the hole. The fish was caught and couldn't be pulled so the overshot's grip was broken and washing over with 41 feet of 9-inch pipe and a rotary shoe was started. The mud was conditioned but the fish stuck on the way out of the hole and jarring the pipe caused the fish to go back to bottom.

Drilling wells to deep pay horizons in this area will probably continue to give the crews trouble in view of the thick Mississippian section (about 400 feet) encountered. Drillers report that the Pennsylvanian formations encountered are similar in hardness to other sections of Oklahoma but the prevalence of cavities and porous sands is much more noticeable. The No. 1 Kitchin used 51 bits to 5,900 feet with an average of 100 feet per bit being made between 2,500 and 4,000 feet and an average of 70 feet per bit being made below 4,000 feet. The No. 1 Boehm required 60 bits to drill from 255 feet to 6,185 feet.



View of the rig on the Champlin Refining Co. No. 1 Boehm, SW SW NE Section 4-24n-5w, Garfield County, Oklahoma. The joint of 6 5/8-inch drill pipe laying on the rack in the foreground was the bottom of the pipe pulled from the hole at the start of a long fishing job

Progress in METALS

By W. L. NELSON

Use of Copper Alloys

A useful chart in tabular form, accompanied by four pages of discussional matter on the uses of 30 typical copper and copper-base alloys is available through Revere Copper & Brass, Inc., 230 Park Avenue, New York. The paper was first presented by M. G. Steele before the Baltimore Purchasing Agents Association.

Such a large number of only slightly different copper-base alloys are available that this summary will be particularly interesting to the semilayman metal user. The tabulation gives compositions, physical properties, notable properties and uses, methods of fabrication and the kinds of wrought forms that are available. Among these alloys, the following are used for condenser tubes—arsenical copper, muntz metal, aluminum brass, admiralty aluminum bronze and three cupro nickel alloys; for heads and tube headers—muntz metal and naval brass; and for miscellaneous services—phosphorized copper for oil burner tubing and beryllium copper for nonsparking tools. Among the high strength copper-alloys when in the strongest condition, are the following:

	Elastic limit	Elongation
Beryllium copper (2% Be)	134,000	6
Silicon bronze (3.25 Si, 0.5 Sn)	100,000	5
Admiralty metal	92,000	5
Phosphor bronze (8 Sn, 0.05 P)	85,000	3
Silicon brass (78-20 and 2 Si)	83,000	4
Cupro nickel (70-30)	83,000	4

These alloys can also be finished in a softer more ductile condition.

Overstress and Fatigue

Abstract: Kommers, "The Effect of Overstressing and Understanding in Fatigue," 41st annual meeting of A.S.T.M., July 1, 1938.

Fatigue limits of three steels and a cast iron were determined using the regular R. R. Moore type machines. The same materials were then stressed under fatigue conditions but at higher and at lower stresses than the fatigue limit. The overstress tests correspond to a commercial practice in which a material is used at a stress above its fatigue limit for a time and then the stress is reduced to the normal design value or the fatigue limit during further service. The cast iron was damaged somewhat less than the other materials and in fact the notched specimens were slightly improved by overstress, but the three steels all suffered damage. Numerous charts are given showing the percentage of damage (or improvement) caused by durations of overstress. Notched specimens were also examined.

Tests of understressing were conducted by gradually loading sound overstressed specimens, say at the rate of 1 pound per day. These tests indicate that the damage due to overstress is not always permanent. In some cases the original fatigue limit was restored by understressing, in others the fatigue limit was increased to the original overstress, and in others substantial increases in the fatigue limit were attained.

The conclusions of the author are:

"1. The endurance limit of a material is not a fixed quantity. It may be manipulated by various stressing methods. Periods of cycle overstress quite commonly reduce the endurance limit, while periods of progressively increasing cyclic understress may greatly increase the endurance limit.

"2. Overstress may either increase or decrease the endurance limit. Usually the endurance limit is increased only at the smaller values of cycle ratio and overstress. However, one material, square-notched cast iron, showed practically no damage due to overstress up to 30 per cent. Cycle ratio is defined as the ratio of the number of cycles applied at a given overstress to the number of cycles at which the material would fail at that stress.

"3. The two important factors which determine the amount of damage due to overstress seem to be the percentage of overstress and the cycle ratio.

"4. In some cases the damage curves tend to approach a horizontal asymptote at high cycle ratios. in other cases the damage curves are practically inclined straight lines, and in still other cases the damage increases rapidly at high cycle ratios.

"5. Progressively increasing cyclic understress, applied to a specimen after overstress, not only may repair the damage which has been done, but in some cases may augment the original endurance limit by substantial percentages. In some cases the endurance limit may be raised to a value considerably above that of the original overstress. A material may be strengthened even after large cycle ratios of overstress."

Low-Temperature Casting Steel

Although the low-temperature impact strength of wrought steels has been repeatedly investigated, not much information about casting steels has been reported. Obviously, the same general types of steels should be suitable in either the wrought or cast condition but the technique of casting practice requires slight modifications in the chemical analysis and manner of heat treatment.

The Merco Nordstrom Valve Co. of Oakland, Calif., has developed a nickel molybdenum vanadium steel for use in its cast valves that has exceHent sub-zero properties and can be easily machined and cast. The valves can be used down to a temperature of minus 150° F., and although they were developed for the manufacture of ethyl chloride at a pressure of 600 pounds, they can be used for petroleum dewaxing processes, handling liquid air or in handling brines. The analysis of the steel and some of its physical properties are:

	Per cent
Carbon	0.08
Manganese	0.29
Silicon	0.12
Phosphorus	0.015
Sulfur	0.018
Nickel	4.06
Vanadium	0.16
Molybdenum	0.50
Tensile strength, pounds per sq. in.	107,000
Yield point, pounds per sq. in.	88,000
Elongation in 2 inches, per cent	22.5
Reduction of area, per cent	61.0
Charpy impact (—150° F.), foot-pounds	20.0

The physical properties tabulated above were obtained by a heat treatment that consists of normalizing at 1,800-1,850° F., oil quenching from 1,500-1,550° F. The castings are held at each of these temperatures for one hour per inch of section.—The Moly Matrix.

Metallurgical Terms

McQuaid-Ehn Grain Size Test

The size of the grains of metal in an alloy is of great significance from the standpoint of physical properties. As one example, the elastic limit of a coarse grain steel may be only half as large as the elastic limit of a fine grain steel of the same chemical composition and otherwise heat treated in a similar manner.

The McQuaid-Ehn test is used to catalog the range of grain sizes that are found in common steels. A.S.T.M. Chart E 19-33, which is now standard, consists of eight divisions of size based on a uniform change from most coarse (No. 1) to finest (No. 8). Size No. 1 shows about one and one-half grains per inch when magnified 100 times and Size No. 8 shows 96 or more grains per inch. These grain sizes are illustrated in Figure 1 for hypereutectoid steels. The test is made by carburizing the specimens at 1,700° F. for eight hours and cooling slowly. Polished specimens are prepared and examined at 100 diameters magnification for comparison with standard photomicrographs similar to those shown in Figure 1.

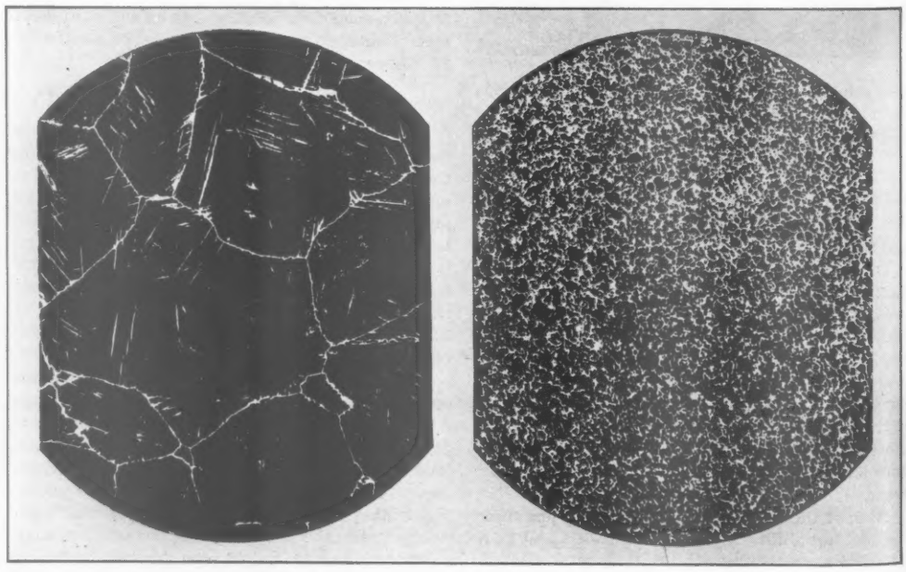
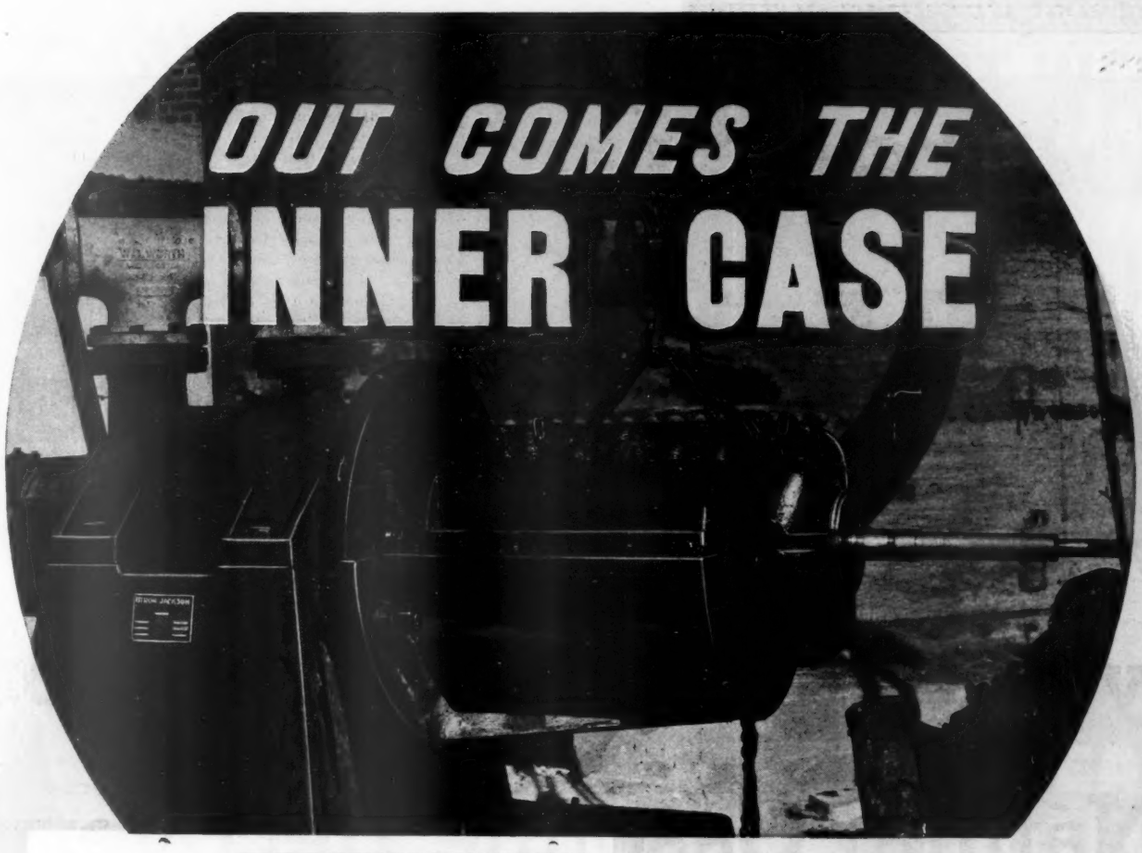
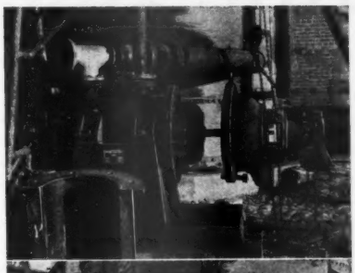


Fig. 1—Standard photomicrographs of hyperentectoid steels magnified 100 times showing coarsest grain sizes at the left and finest at the right





As the first step in dismantling, the End Cover and Bearing Housing are removed without disturbing Piping or Driver. The second step is shown above.

The completely assembled Rotating Element is ready for removal. Dismantling Tray is bolted in place and upper half of Inner Volute Case has been lifted.

Ready for removal of Rotating Element to the machine shop, after which the spare Rotating Element is dropped into position and the pump readily reassembled.

BYRON JACKSON DOUBLE-CASE HOT OIL CHARGING PUMP . . .

. . . with Dismantling Tray bolted in position supporting the *complete* Inner Volute Case and Rotating Assembly here *being removed as a single unit*. Notice the large amount of coke present, in spite of which the Inner Volute Case is easily removed due to the irregular sections which permit breaking away the coke. The Byron Jackson design eliminates all close clearance points which cause binding.

Attention is called to the fact that neither the Piping nor the Driver has been disconnected or disturbed in any manner.

Details will be furnished upon application.

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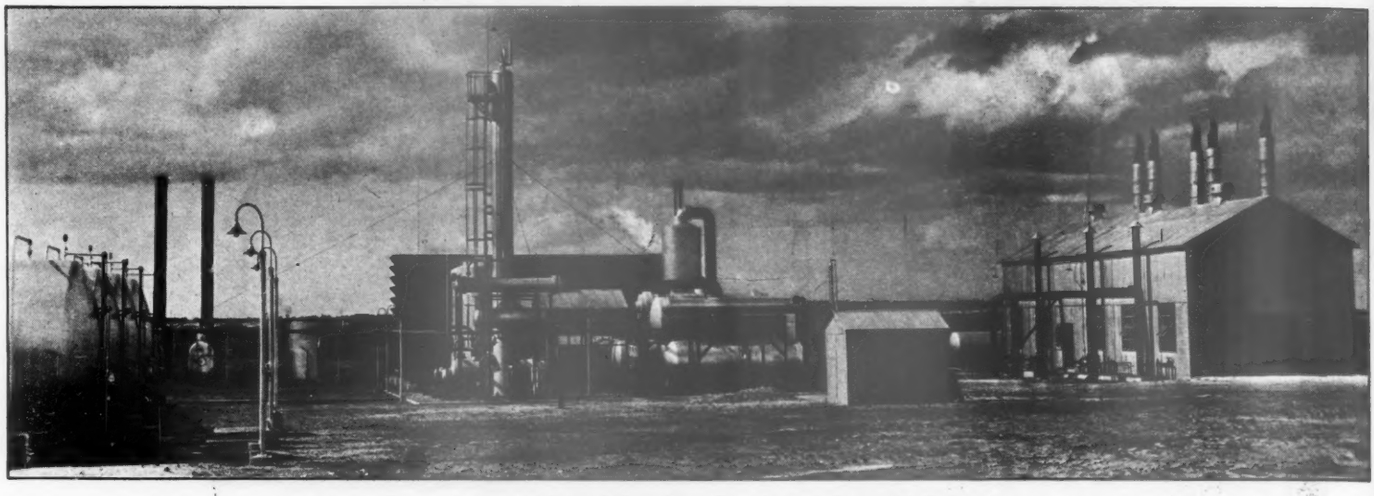


General view of Duval Gasoline Co. plant at Benavides, Texas

Dehydration and Refrigeration for Natural Gasoline Recovery

By D. W. WILSON
M. W. Kellogg Co.

For several years the most generally accepted method of manufacturing natural gasoline has involved absorption processes. This has been successful in its application, but has required the use of considerable quantities of absorption oil, with the attendant pumping, heating, cooling, and stripping of this oil. This handling of large quantities of oil of necessity means high utility consumption, particularly, usually, of steam. Also, losses of absorption oil and its contamination represent appreciable items of expense.

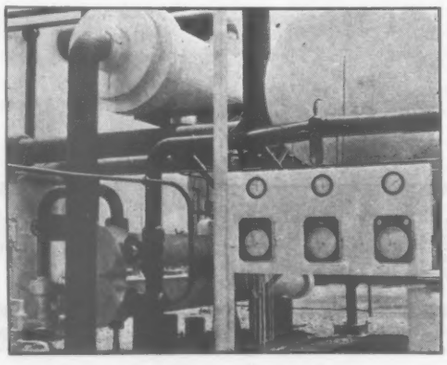
Considerable interest is therefore attached to the development of a new type of plant for natural gasoline manufacture. This new recovery plant does not use any absorption but employs rather a combination of refrigeration and substantially complete dehydration of the gases. Fundamentally, this process depends upon cooling (after dehydration) the incoming feed gas to a sufficiently low temperature so that all the desirable constituents are liquefied. Subsequently this natural gasoline is recovered, by the usual stabilization, from this low temperature liquid. Successful application of this involves a knowledge of the physical properties of hydrocarbons at varying low temperatures and varying pressures. The necessary background, both from the theoretical and the practical point of view, has been acquired by the M. W. Kellogg Co. from extensive laboratory research, as well as the actual operation of several thermal polymerization plants. In these plants dehydration of the gas and low temperature condensation are employed exactly as is the case for natural gasoline recovery.

One casinghead plant of this type has been in successful operation for about six months. It is located at the plant of the Duval Gasoline Co., in Benavides, Tex., about 75 miles from Corpus Christi. This installation was designed to handle 6,000,000 cubic feet per day of wet gas containing about 2.5 gallons per thousand of 26-pound Reid vapor pressure natural gasoline, and therefore to produce about 15,000 gallons per day of finished product. Actually, as will be discussed later, the incoming gas proved to be richer than this.

Description of Plant

Gas enters the Duval plant at atmospheric pressure, is compressed to 50 to 60 pounds per square inch gauge, and is processed at this pressure; the residue gas is consumed as plant fuel or returned to the leases for use there, at about 40 pounds per square inch gauge. Consideration was given to the possibility of producing propane and butane, but this was not economic and consequently no provisions were made for the recovery of these products.

The field supplying the wet gas comprises several leases and includes about 200 wells. The separators at the wells operate either at atmospheric pressure or slightly above or below it, depending upon various operating conditions. Some of the wells are equipped with elevated separators, while in others the oil is periodically pumped to storage tanks by the pressure of residue gas operating a small blow-case located at ground level. This operation proceeds automatically by means of a suitable liquid level instrument and is simple and inexpensive. All wells flow continuously through suitable chokes. A network of gathering lines takes the wet gas to the plant and a similar system of lines returns the residue gas to the leases.



Exterior instrument panel

Reference to the flow sheet will indicate readily the operation of the plant. Incoming wet gas at substantially atmospheric pressure passes through a scrubber to remove any entrained liquid. This gas is then compressed by gas engine driven compressors to a pressure of 50 to 60 pounds gauge. This is then water-cooled by an exchanger, then passed through an exchanger where it is further cooled by the cold residue gas to a temperature of 40° F. At this temperature some of the heavy hydrocarbons, as well as considerable liquid water, have condensed. The mixture of liquid and gases is separated in a suitable drum. The water is drawn off and goes to the sewer while the liquid hydrocarbons are pumped to the stabilizer as later described. The gas from the separating drum is passed through either one of two parallel driers. Here it is freed of water to such an extent that no condensation of liquid water or any solid formation occurs at temperatures as low as —50° F. The water-free gas is then further cooled to a temperature of —35° F. by an exchanger, in which propane evaporates at practically atmospheric pressure. The resulting mixture of liquid hydrocarbons and gases is separated in a drum. From this the cold vapors serve as a heat exchange medium for the feed gas as outlined above. The cold

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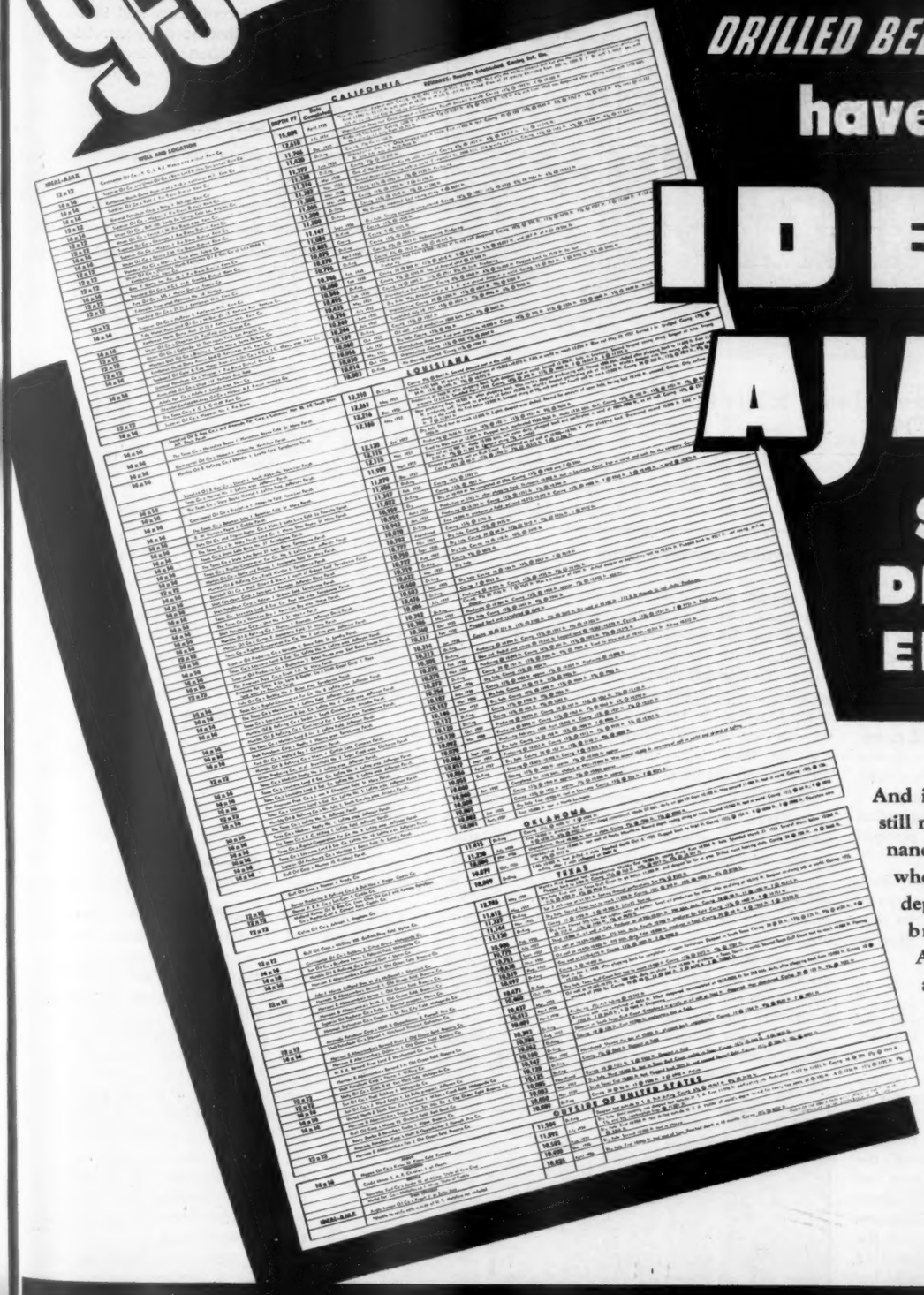

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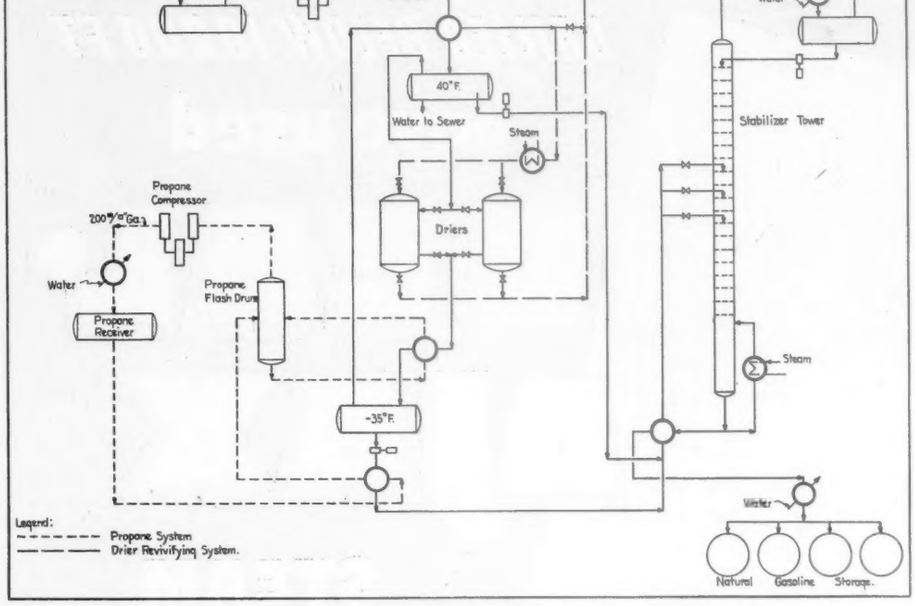


Flow chart for low-temperature gasoline recovery plant

liquids are pumped through a heat exchanger cooling the liquid propane, then they are joined by the liquid hydrocarbons produced in the heat exchanger located just before the driers. This liquid mixture then is heat-exchanged against the finished gasoline from the bottom of the stabilizer. The preheated liquid then passes into a 20-tray stabilizer, reboiled at its base by a conventional steam-heated reboiler. The stabilizer usually has operated at a pressure of 175 pounds gauge. The overhead vapors from it are partially condensed in a water-cooled condenser, and the resulting reflux is collected in a drum, from which it is pumped to the top of the stabilizer.

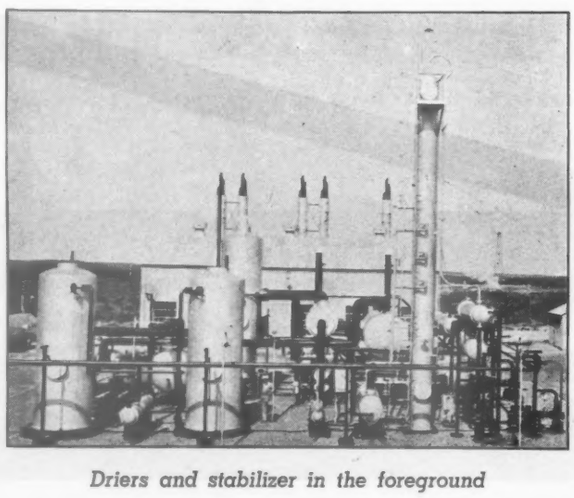
The bottoms from the stabilizer are heat-exchanged with stabilizer feed, as mentioned above, further cooled with water, and then pass to storage as finished stabilized natural gasoline of the desired Reid vapor pressure.

The Driers

The driers, as stated above, are in parallel and are filled with granular material having high absorptive capacity for water vapor. One drier operates for 24 hours, removing water from the gas passing through it. This unit is then cut out of service and the other is put in use. The accumulated water in the adsorbent must now be removed. This is done, in this plant, by passing through the drier a small portion of the residue gas which has been heated, by a steam heater, to a temperature of 325 to 350° F. This stream of hot gas vaporizes the water in the drier. After a sufficient time the water is completely removed, the steam-heating is then cut off, and the drier cooled by continuing to pass residue gas through it. At the end of six to eight hours the heating, water removal, and cooling are complete, and the drier is ready to be put back into service and the cycle repeated.

The refrigeration cycle comprises the following: Propane evaporates at practically atmospheric pressure in the heat exchanger as described above in discussing the main plant flow. A drum is provided to prevent any entrained liquid from entrance to the compressor. Propane vapor from this drum passes to the compressor, from which it is discharged at a pressure of about 200 pounds per square inch, it is cooled and condensed by water and passes to a small storage drum. From this drum the liquid propane is cooled by heat exchange with the cold hydrocarbons mentioned above. The propane liquid is then cooled by expansion to atmospheric pressure, and it is then ready to use in the propane evaporator. It will thus be seen that the refrigerating cycle is a closed one and that there is no direct contact between the propane and the gases being cooled.

The plant auxiliary services include a gas engine driven electric generator of 175 K.W., a water-cooling tower, motor driven water circulation pumps, and two oil-country type boilers, each of 85 b.h.p., operating at 200 pounds pressure. The boilers are equipped with the usual accessories. There are three cooling water pumps, one pumping through closed type coolers and to the top of the cooling towers, one through an open cooling system on the compressors, and the third pumping compressor cooling water from an open pit to the top of the cooling tower. Boiler feed water is obtained from condensate—the necessary make-up being provided by gas lift from existing water wells. A small boiler feed water tank is included, as is also a 50,000-gallon raw water storage tank. The three water circulation pumps are electrically driven, the boiler feed pumps and the three pumps of the plant proper are steam driven. The plant is well equipped with meters, thermometers, pressure regulators, liquid level controllers and indicators, pressure gauges, and other needed control instruments. For storage of finished gasoline, four tanks, each of approximately 15,000 gallons capacity, were provided.



Driers and stabilizer in the foreground

PLANT DATA

Feed gas compressor (h.p.)	600
Propane compressor installed (h.p.)	450
Propane compressor used (h.p.)	300
Boiler h.p. installed	170
Boiler h.p. used (about)	75
Water circulation installed (except compressor) (g.p.m.)	1700
Water circulation installed (compressor) (g.p.m.)	700

Typical feed gas analysis		Tail gas	Stabilizer gas
CH_4	83.46	86.12	26.95
C_2H_6	5.69	7.48	12.57
C_3H_8	4.62	4.38	37.37
C_4H_{10}(Iso)	1.37	.94	14.73
C_4H_{10}	1.57	1.08	8.38
C_5H_{12}(Iso)	1.13	0.00	0.00
C_5H_{12}	.49	0.00	0.00
C_6+	1.67	0.00	0.00

Stabilized Gasoline

C_5H_8	0.00	Grav.	77	
C_4H_{10}(Iso)	2.67		90° F.	Initial
C_4H_{10}	19.17		96	5%
C_5H_{12}(Iso)	18.80		100	10
C_5H_{12}	13.27		100	20
C_6+	46.09		120	30
			132	40
			144	50
			160	60
			180	70
			196	80
			220	90
			305	95
			305	E.P.
			95.8	Rec.
			18.4 lbs.	Reid V.P.

Pressures

Feed gas:	
Plant inlet	Atmos.
Comp. discharge	50-60 lbs. gauge
Residue gas	40-50 lbs. gauge
Propane:	
Comp. suction	Atmos. to 2 lbs. vacuum
Comp. discharge	Approx. 190 lbs.
Stabilizer	175 lbs.
Steam	200 lbs.

Temperatures

	(°F.)
Feed gas:	
Entering driers	40
Final cooler outlet	—35
Gas for drier revivification	325-350
Residue gas from plant	75
Stabilizer:	
Feed entering	160
Bottoms	230
Top	140
Reflux drum	100

Quantities

Feed gas	6,000,000-6,500,000 cu. ft. per day
Gasoline produced	13,000-15,000 gals. per day

The above analyses are representative although not averages, and not entirely consistent, especially with respect to the feed gas composition. This varied with the temperature and the pressure at the separators—this variation being particularly noticeable from day to night on account of the widely differing day and night temperatures.

The plant was designed to produce 28-pound Reid vapor pressure gasoline but current market conditions at the time of taking the above data rendered it advisable to produce the 18.4-pound gasoline.

It is of interest to note that the analyses indicated 100 per cent recovery of isopentane and heavier with complete absence of propane in the stabilized gasoline.

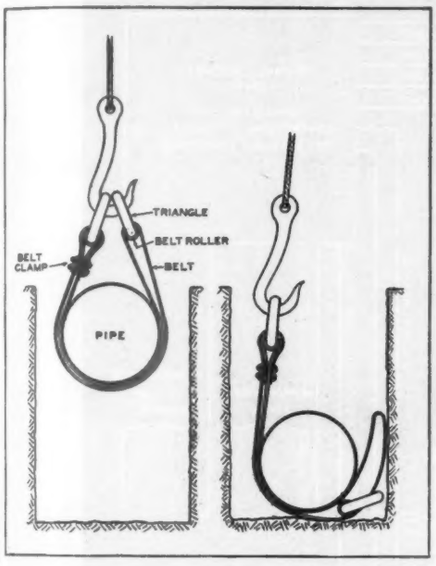
The plant has continuously processed 6,500,000 cubic feet per day of gas and produced therefrom 15,000 gallons per day of 18.4-pound Reid vapor pressure gasoline, as compared to designed figures of 6,000,000 cubic feet daily and 15,000 gallons per day of 26-pound Reid vapor pressure gasoline. Capacity was limited to this figure by the feed gas compressors. It will be noted that the installed propane compressor capacity was 50 per cent

(Continued on Page 57)

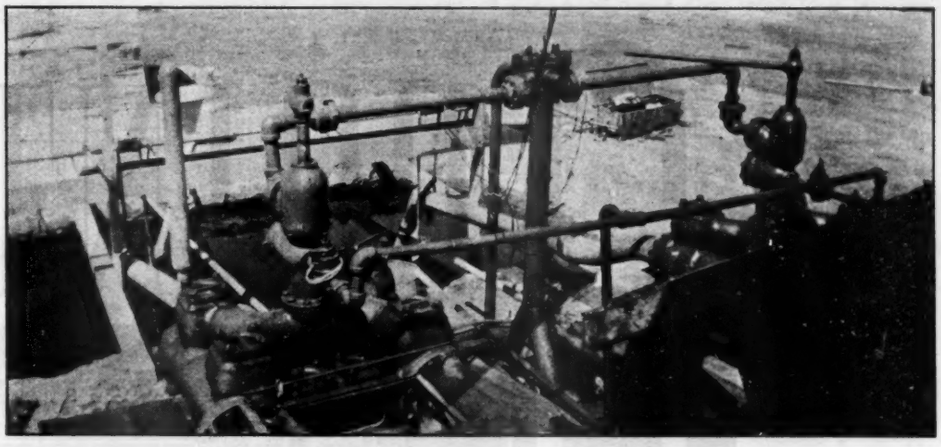
OPERATING IDEAS

Improved Pipe Sling

When uncoated pipe is used in constructing a pipe line, a chain sling is commonly used to lower the pipe into the ditch. When coated pipe is used, however, it becomes necessary to use a sling made of belting for this task to avoid damaging the coating. Even a belt sling often causes damage because one of the steel triangles at the end of the sling must be dragged out under the line after it has been lowered to the bottom of the ditch.



Industrial Engineering Co. of Los Angeles recently designed a belt sling which effectively avoids damage to coatings. At one triangle, both ends of the belt are clamped. The belt is merely looped through the other triangle. After the pipe has been lowered into the ditch, the triangle at the unclamped end of the belt is removed from the crane hook and thrown down in the ditch beside the pipe so that it occupies a position several feet from the end of the looped belt. When the crane pulls the sling out from under the pipe, the belt separates the triangle from the pipe and prevents it from scraping off portions of the coating.



Support for Mud Pump Manifold

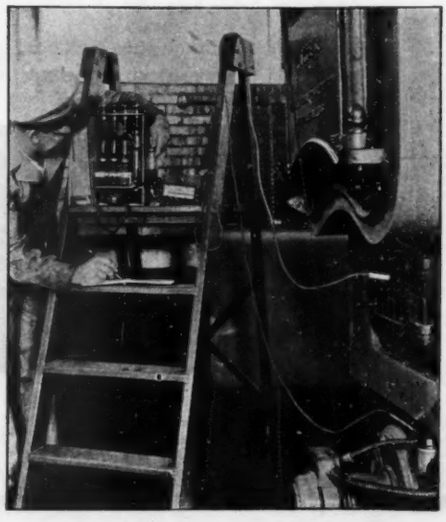
Since it is necessary to have the pumps set parallel and quite far apart on a mechanical rig because of the flywheels and driving jack-shaft, the mud pump manifold is extremely long. The automatic switching valve between the pumps weighs close to 250 pounds and consequently requires some support. This contractor, drilling on a wildcat in Garfield County, Oklahoma, didn't want to be shutting down due to leaking connections so he designed this steel support for the valve. It takes all the weight from the connections and places it on the pump framing skid. It does not need to be adjustable as the distance from the framing skid to the manifold is the same on all locations. The air-chamber on the suction line is being used by some drilling contractors to prevent air knocks in their power pumps.

Flue Gas Analysis

An analysis of the flue gases and indication of draft conditions denotes the efficiency of heating boiler burners and the positive or negative intensity of the draft respectively. It is not uncommon for oil-burning equipment to waste 25 per cent of its fuel unnecessarily if the burner and draft efficiencies are not maintained at a maximum. In addition to using such an analysis for checking combustion conditions in a Diesel engine, some pipe line engineers have found it convenient for checking the amount of CO_2 in air intakes where it was suspected that exhaust gases were being taken in with air.

Pontoons for Dredging Cooling Water Pond

At a compressor station on a gas line, it was recently found to be necessary to dredge the pond from which cooling water is obtained. The line to the boat, holding the centrifugal pump, is supported by pontoons. Pontoons for each joint of pipe are made on shore with the joint held in place so that after launching it is only necessary to float the joint to the point where it is to be coupled to the rest of the line. The picture shows the reserve supply of pipe on shore waiting to be used when dredging is to be done further out in the pond, beyond the place where dredging was going on at the time the picture was taken.



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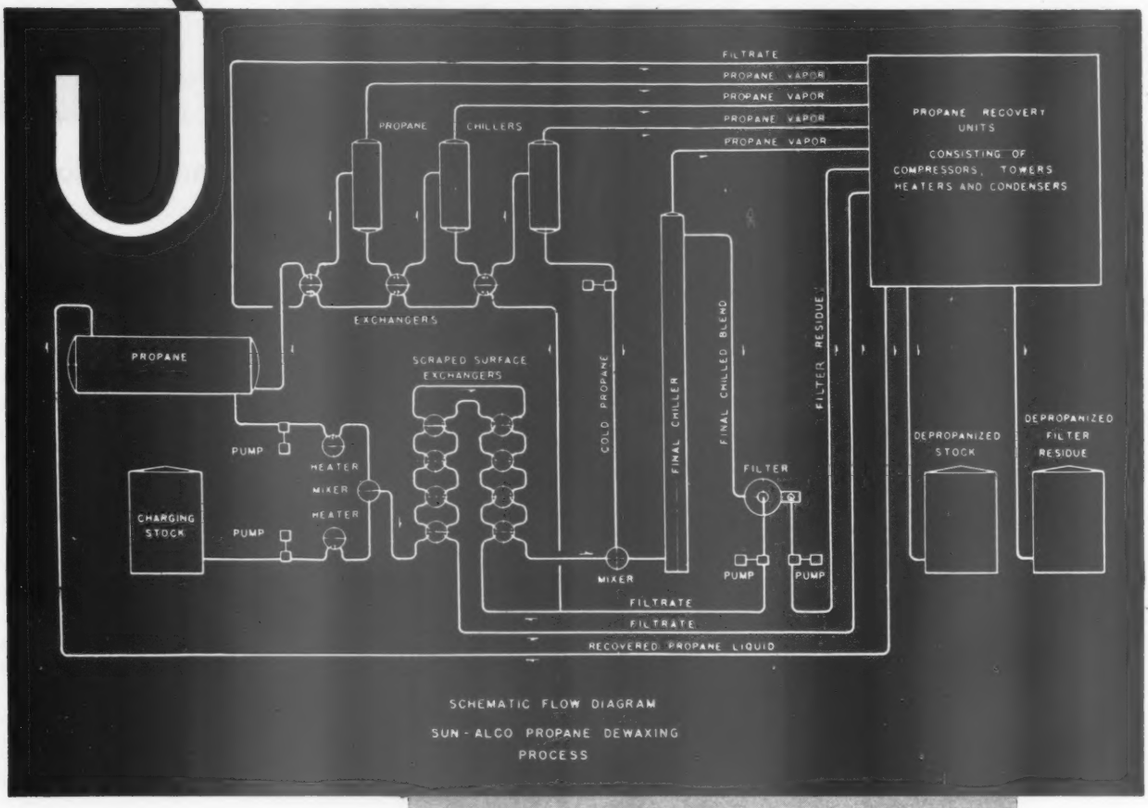


SCHEMATIC FLOW DIAGRAM
SUN - ALCO PROPANE DEWAXING
PROCESS

1 **Continuous Chilling**

2 **Indirect Chilling of Low Propane Dilution Blends**

3 **Simultaneous Dewaxing, Deresining and Deasphalting**

DEHYDRATION

(Continued from Page 50)

in excess of that actually used.

Brief study of the included flow sheet and description of process will show that the plant consists of heat exchangers, driers, refrigeration system, stabilizer, and necessary accessories. This has resulted in extreme simplicity of operation and of control. Possibly this is best illustrated by the fact that the plant has been shut down and started up several times in 15 minutes to one-half hour.

Provision for Expansion

It is interesting to examine the flexibility and possibility of expansion of this plant. Considerably more than 6,000,000 cubic feet daily of gas are now available and therefore greater capacity is of real importance. After investigation it has been calculated that solely by addition of feed gas and propane compressors at least one-third additional gas may be processed with the same recovery. Considerably greater further increase in capacity may be obtained by simple and inexpensive paralleling of some exchangers. The inherent simplicity of the equipment lends itself readily and cheaply to provisions for greater gas throughput, since the stabilizer was purposely designed very conservatively and the driers with no change easily carry a greater load by decreasing the length of time of the drying cycle.

It will be noted that no direct steam is used and that steam consumption is confined to *(a)* small pumps, *(b)* heating gas for drier revivification, and *(c)* stabilizer reboiling. Pumps may readily be driven by gas if desired and the heat for drier revivification may well be supplied by a remotely located direct gas-fired heater or by hot flue gas directly. Thus steam needs may be economically limited to that for reboiling the stabilizer. Where especially important—by modification of the processing—even the stabilizer reboiler heat may be supplied otherwise, thus completely eliminating steam.

A brief further word about the driers may be pertinent. The adsorbent is thoroughly proven since it has been employed for years in oxygen plants where water vapor removal must be much more complete than in natural gasoline recovery since the temperatures in the case of liquid air are much lower. Also, the material has found application for drying in thermal polymerization units. Experience with it in these cases has shown its life, with proper usage, to be practically indefinite with no breakage or deterioration. No troubles with ice or hydrates have been encountered with further cooling of the dried gases.

Due to the extreme simplicity of the entire plant, operating labor is low. There are, on the plant described here, two operators per shift, and it is apparent that a much larger plant or other duties could be handled by these two men.

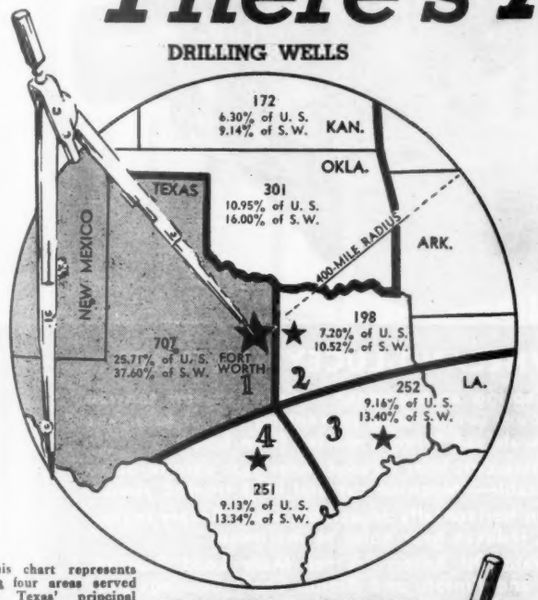
Applicability of Process

Operation at 50-60 pounds pressure and with feed gas containing 2 to 3 gallons per thousand represents only one condition of the many encountered in natural gasoline recovery. An endeavor has been made to study the future field of usefulness of this process. To this end preliminary designs have been made for the following cases:

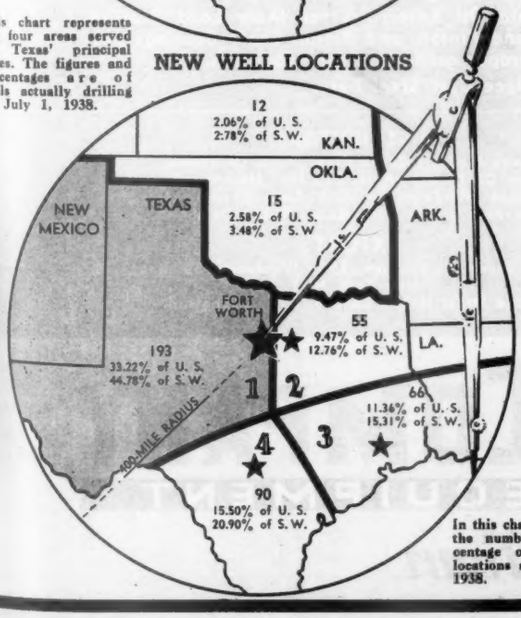
(a) 200 lbs. pressure and 2.5 gallons per thousand
(b) 350 lbs. pressure and 1 gallon per thousand
(c) 450 lbs. pressure and 1 gallon per thousand
(d) 350 lbs. pressure and ¼ gallon per thousand

In some instances capacities have varied for the above from 6,000,000 cubic feet daily to 100,000,000 cubic feet daily. Obviously, these selections do not completely cover possible requirements but the range is considerable. In all these cases the process

There's ACTION Here..



This chart represents the four areas served by Texas' principal cities. The figures and percentages are of wells actually drilling on July 1, 1938.



In this chart are shown the number and percentage of new well locations as of July 1, 1938.

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Write for Bulletin No. 149

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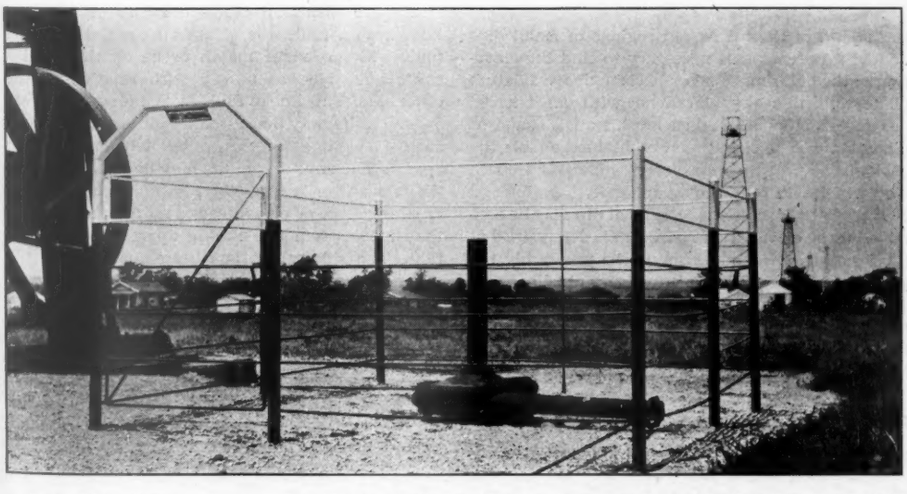
is definitely technically applicable and with substantially complete recovery of isopentane and heavier hydrocarbons. Economics will obviously depend upon prevailing local conditions, especially as to values of gas and gasoline. The temperature to which the feed gas must be cooled varies with pressure and quality from 0° F. to —40° F., a range readily obtainable with propane, or if desired. with ammonia. Increased pressure is of definite assistance in reducing the drying equipment needed as also in permitting the desired recovery at a higher final temperature of feed gas mixture. Minor changes in heat exchange suggest themselves as feed gas pressure and analysis change. However, from a study of the existing plant in Texas and the four cases enumerated above it appears that this dehydration-refrigeration process, as outlined, has an extended field of application, with high recovery and with the attendant process advantages of flexibility and simplicity of equipment and operation, and relatively low utility requirements.

Combination of Natural Gasoline Recovery and Thermal Polymerization

Study of this casinghead process indicates many advantages in combining thermal polymerization unit with natural gasoline recovery. One of the major costs of thermal polymerization lies in the provision for obtaining liquid feed of propane and butane and of obtaining recycle feed recovery. By increasing stabilizer pressure and in some cases by other simple modifications in flow, large quantities of liquid propane and butane mixture (containing some lighter material) can be taken—by water cooling only—as a product from the stabilizer reflux drum. This liquid may be pumped through the polymerization furnace, thence to a high-pressure tower, from the overhead condenser of which liquid recycle is withdrawn and joined with the liquid fresh feed stream to the polymerization furnace. If desired, the uncondensed overhead vapors from the polymerization unit high-pressure tower may be returned through the cooling and recovery cycle of the natural gasoline recovery unit. A low-pressure rerun tower and simple clay-treating complete the requirements of the polymerization unit. It is possible to effect economies in other ways by further combination of these two processes. However, it is not the purpose of this paper to discuss this in complete detail, but rather to point out that simple and relatively inexpensive small thermal polymerization units of this type can be and have been built, and to indicate the important advantages arising from the combination of the two processes. Among these advantages are: *(a)* low labor costs—two operators per shift are able to handle the small combination unit; *(b)* low feed recovery costs—this is readily available from the natural gasoline plant by water cooling only; *(c)* simplicity in equipment and operation; and *(d)* low utility requirements.

SAFETY— Guard at Pull-Rod Swing



In fields where wells are pumped by backside power take-off, swings are often required to reach the wells being serviced. These swings need not be dangerous. They can be protected by a fence such as the one shown above.

The pull-rod swing looks harmless at first glance but upon inspection it shows that in its turning back and forth it could not only trip the operator but smash him as it drags over the ground. Swings offer a peculiar attraction to children as they slowly turn back and forth. These swings operate practically without any noise and are particularly dangerous at night not only for men but livestock.

The protecting fence in the picture is in the Little River field and was built to prevent accidents around the swing. All swings on the lease are similarly equipped. The enclosure and gate were built by a welder from old 2-inch pipe and discarded sucker-rods, and when painted it makes the lease more attractive as well as safer.

This operator is evidently safety-minded as the lease is in excellent condition and the weeds are cleared away from the well and crushed stone scattered to keep the grass down.

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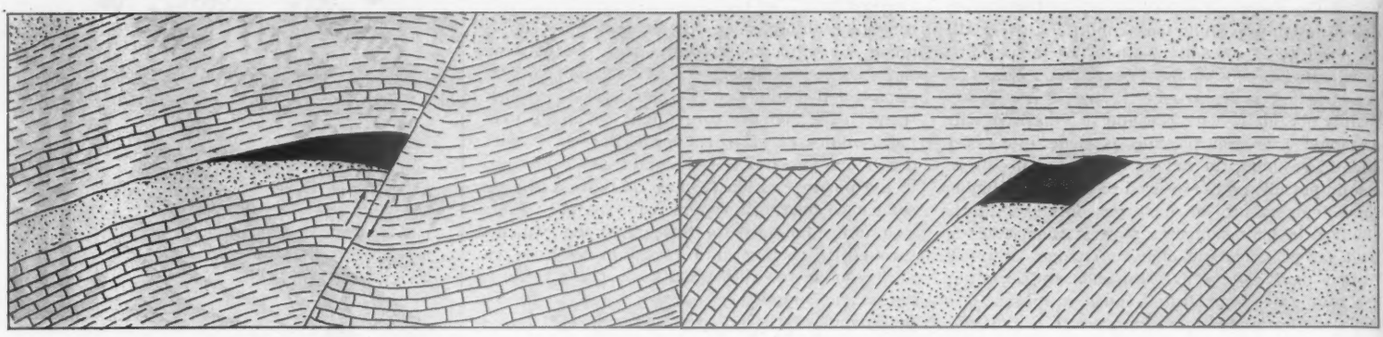


Trap formed by a fault *Unconformity seals end of oil-bearing formation*

Geological Structures

By L. G. E. BIGNELL

THE essential thing to make a commercial gas or oil pool is an underground reservoir adjacent to the source of hydrocarbons. The reservoir must be closed in at least one direction so the gas and oil cannot escape. Pore space in sandstone and limestone form the predominating type of reservoirs but gas and oil may accumulate in cavities near faults and fissures. Oil has been found in igneous rocks, which are usually nearly impervious, but the oil found in cavities in igneous rocks evidently migrated from source beds, commonly along fractures or faults in the formations.

To form a satisfactory reservoir it is essential the formations be so deformed as to prevent the gas or oil from finding escape after accumulation in the pore spaces. The geologist has called such deformations of the strata "structures." They are varied in form and very numerous in character but the principal forms of structure in which gas and oil has been found in commercial quantity may be classified as anticlines, synclines, noses, terraces, embayments, homoclines, lenses and around salt domes or plugs. While these are the most familiar type of structures encountered in producing gas and oil fields faults, intrusions, extrusions and unconformities play their part in the accumulation of gas and fluid.

Sedimentary rocks were laid down horizontally in most instances. The loose material making up the sediments was consolidated and formed into beds or strata. Movements in the crust of the earth wrinkle and fold the sedimentary beds. After such movements the rocks are said to have "dip and strike." The dip of the beds indicates the degree of inclination the rocks make with the horizontal. The strike of a stratum in a horizontal plane is the direction along the bed at a right angle to the dip. The dip, or angle of inclination, may vary from very steeply inclined strata, such as observed in mountain ranges, to small undulations found in beds in which little movement has occurred.

To determine the characteristics of formations the geologist measures the degree of dip by the use of a clinometer and the strike of the dip by compass. On a map such readings are represented by an arrow or dip sign. The arrow points in the direction of the dip and the angle of the dip is written along the line of the arrow. The direction of the strike is shown by the line drawn perpendicularly at the end of the arrow. In regions of small dips or few exposures it is necessary to find the elevation of the outcrops of a key-horizon above a datum plane and this may be done with an aneroid barometer, engineer's spirit level, transit stadia or plane table. The elevations so obtained enable the geologist to prepare a structure contour or isobath map which will represent graphically the dips and strikes of the formations. Regional dip may be estimated if the elevation of a stratum is determined at three points. The points should be preferably the points of a triangle and not in a straight line.

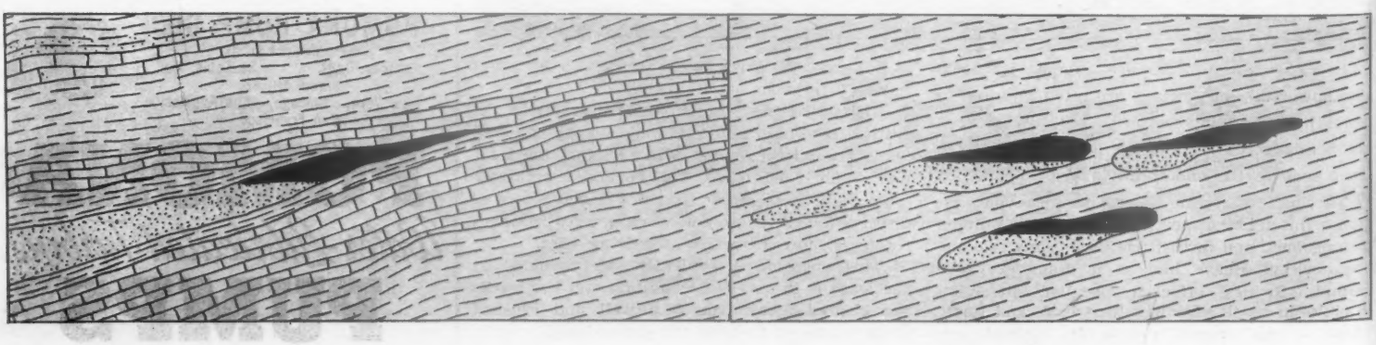
The dip of the strata may remain the same for great distances or may change, forming various folds. A dip in one general direction is known as a homocline. When two homoclines dip away from a common line or axis, they form an anticline. In other words, an anticline is an upward fold of the strata forming an arch with the convex side on top.

If two homoclines dip toward an axis forming a trough it is known as a syncline and the convex side is down, or on the bottom. Anticlines may be classified as dome, level top or level axis, and plunging.

When the strata dip away in all directions from a central point they form a dome. When the axis or the line from which the strata dips is level for a distance it is known as a level top or level axis anticline. If the anticline axis dips in one direction the structure is classified as a plunging anticline. A smaller, and generally a plunging anticline along the flank of a main anticline, or along a homocline, is called an anticlinal nose. A terrace is formed by the sudden flattening of the dip for a short distance and resembles a step-like structure. A syncline is the complement of a dome or anticline and forms a basin. Gas and oil may be found in a syncline but it is an unusual occurrence.

When sedimentary or igneous rocks are bent or folded they may fracture or actually break. If the strata are displaced along the line of fracture, known as a fault, the strata on each side of the fault will no longer match or be continuous because one side has moved with relation to the other side. This line of faulting is known as a shear zone. Faults may be caused by either lateral pressure (crushing force) or by tension (pulling apart). The resulting faults may be classified as of the "thrust" or "reverse" type when caused by the crushing force or pressure, and normal faults when they result from the pulling apart of the formation. The side which has been pushed over the other is the hanging-wall, or is more commonly known in the oil industry as the up-throw side, and the under side may be called the foot wall or down-throw. The distance of such movements may be a few inches or several hundred or even thousands of

Shoreline type of oil reservoir *Sand lenses in impervious formation*



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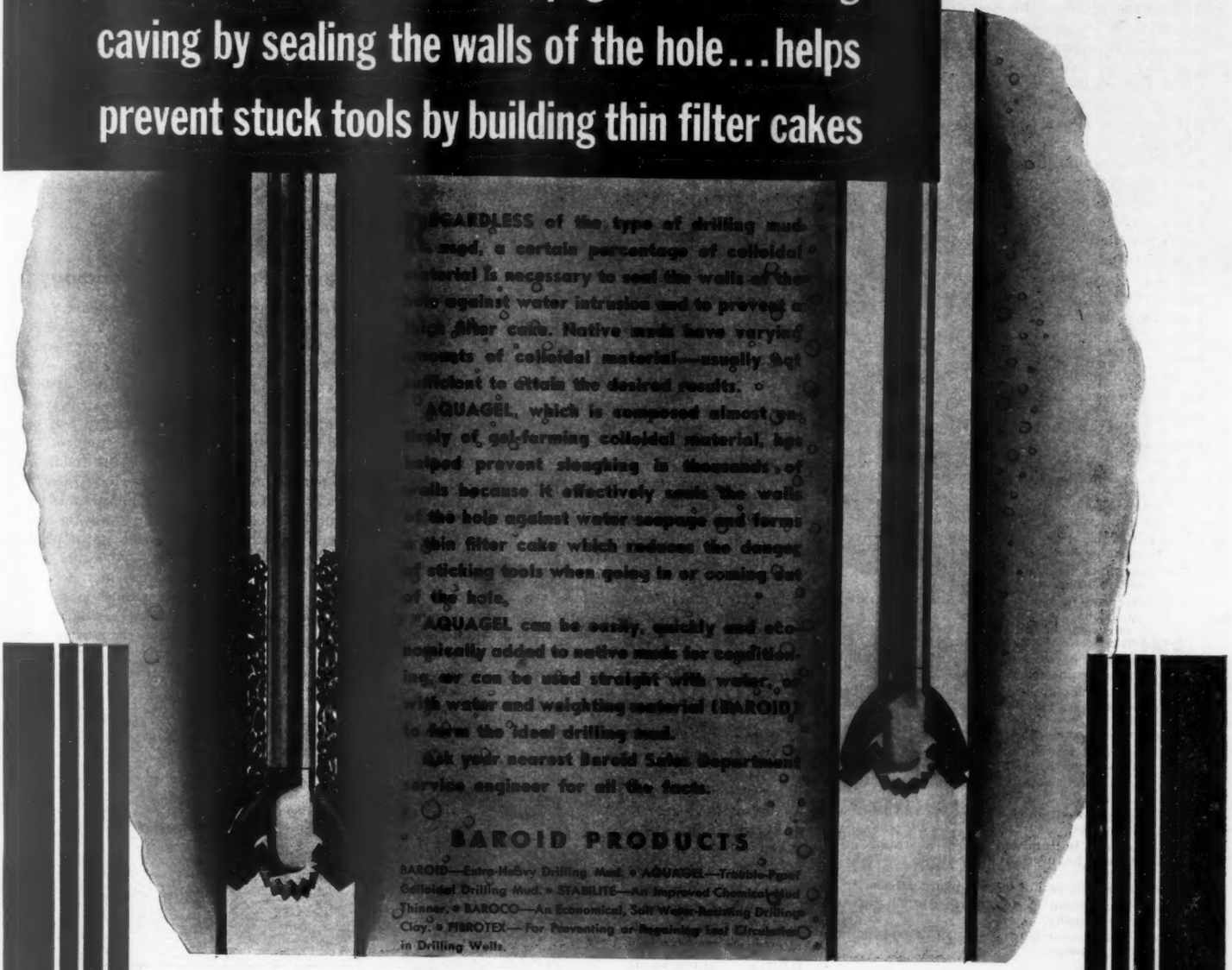
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mud, a certain percentage of colloidal
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Open hole lined with a thick filter cake deposited by a native clay. Shaded area around open hole indicates water intrusion. Cake and cuttings tend to stick bit.

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feet. The heave of a fault is the horizontal distance of displacement, the hade is the angle of the fault line or shear zone with respect to a vertical plane.

In the search for new oil the geologist looks for surface or subsurface evidence of structure. Some deep-seated earth movements are reflected at the surface and the strata are distorted. When mapped they will indicate the class of structure and it is usually assumed this same type of structure will continue downward. Knowing it is necessary to have closure in the reservoir if gas and oil are to be retained, the geologist interprets the evidence of structure to mean good or poor possibilities of gas and oil accumulations.

Dr. I. C. White in 1885 reviewed and elaborated on the theory that the anticline provides the ideal structure for the accumulation of oil and gas because those elements, being lighter than water, will float on it and occupy the space in the upper portion of the reservoir. This theory was first advanced in 1861 by T. Sterry Hunt and E. B. Andrews, but not generally accepted until Doctor White proved its validity by mapping dome structures and then drilling and developing oil and gas fields.

In his discussion of "Classification of Oil and Gas Reservoirs," W. B. Wilson, Gulf Oil Corp., geologist, suggests the following classification:

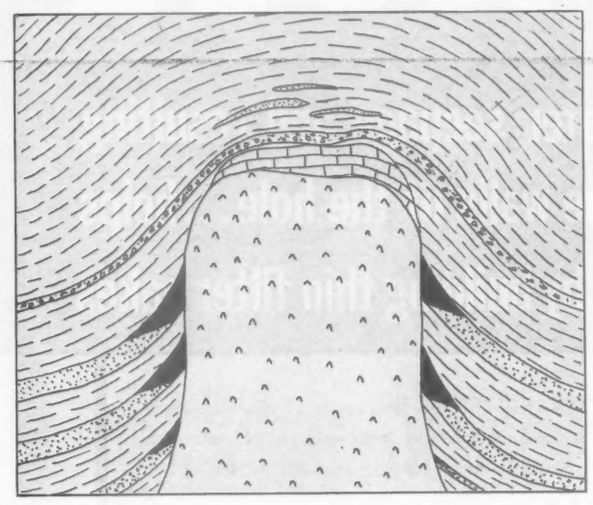
I. Closed reservoirs.
  A. Reservoirs closed by local deformation of strata.
    1. Reservoirs closed by folding (contours drawn on upper surface close locally).
      (a) Reservoirs in closed anticlines and domes.
      (b) Reservoirs in closed synclines and basins.
    2. Reservoirs developed through the offsetting of strata by faulting of homoclinal structure.
    3. Reservoirs defined by combination of folding and faulting.
    4. Reservoirs formed through cutting of strata by intrusions.
      (a) Intrusions of salt.
      (b) Intrusions of igneous rock.
    5. Reservoirs developed in fault and joint fissures and in crush-zones.
  B. Reservoirs closed because of varying porosity of rock (contours may not close if drawn on upper surface of reservoir only. No deformation of strata necessary other than regional tilting.).
    1. Reservoirs in sandstone caused by lensing of sandstone or by varying porosity in sandstone.
    2. Lensing porous zones in limestones and dolomites.
    3. Lensing porous zones in igneous and metamorphic rocks.
    4. Reservoirs in truncated and sealed strata.
      (a) Closed by overlap of relatively impervious rock.
      (b) Closed by seal of viscous hydrocarbons.
  C. Reservoirs closed by combination of folding and varying porosity.
  D. Reservoirs closed by combination of faulting and varying porosity.

II. Open reservoirs.
  None of commercial importance.

Types of Reservoirs

Most of the oil discovered and produced to date has come from reservoirs of the local deformation of strata type caused by folding and classified specifically as anticlines and domes. Structures of this type have been found more easily by surface exploration and when subsurface geology was developed anticlines and domes were mapped by study of data secured from well logs and later by geophysical surveys. Many oil fields were found about 30 years ago through the errors of geologists interpretating well logs which at that time were nearly all based upon the reports of cable tool drillers and subject to wide differences of opinion.

When micropaleontology was introduced much more subsurface mapping resulted and when geophysics were applied to the search for subsurface structures the discovery of anticlines and domes was aided. Other type structures were mapped by use of these methods but for size and volume of oil the anticlines and domes exceeded



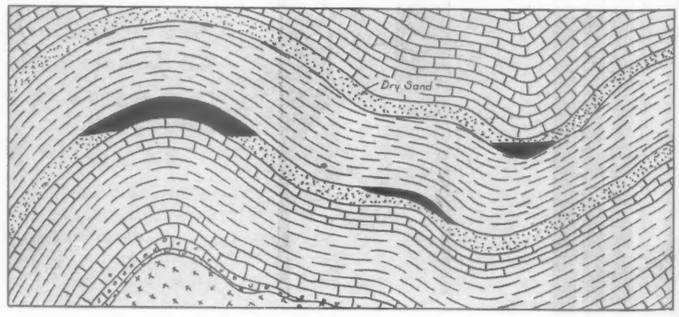
Oil trapped against sides of salt plug

in importance all other types of structures combined.

There are a few closed synclines and basin-like oil fields listed by Wilson such as Griffithsville, Tanner Creek, and Grannys Creek, all in West Virginia.

Another important group of oil fields may be classified as found in combination of folding and faulting structures. Intrusions, especially of the salt dome type, account for many fields along the Gulf Coast. The fields found on structures developed by igneous intrusions are not of any commercial importance. There are some reservoirs developed by fissures that have been found productive of oil, such as Tow Creek, and Florence, Colorado; Spring Creek, Tennessee; Salt Creek and Little Lost Soldier fields, Wyoming.

Another class of structure which has developed oil fields of major importance is that closed by change of porosity. The East Texas oil field may be so classified, as well as Bartlesville sand pools of northeastern Oklahoma and numerous fields in Arkansas, Illinois, Indiana, Kansas, Montana, Ohio, Oklahoma, Pennsylvania, Texas, and West Virginia. Some of these fields may be also classified as "shoreline" deposits and it seems apparent that much of the future oil must come from still-to-be-discovered fields of this class which will be found only by a combination of applied regional geology, geophysics, and exploratory drilling.



Anticline, terrace and syncline type reservoirs

Limestone and dolomite reservoirs have played an important part in the development of oil fields and will continue to do so. Such fields are located in Kentucky, Montana, New Mexico, Illinois, Ohio, Tennessee, and West Texas.

There are a few fields found in igneous and metamorphic rocks, such as Lytton Springs and Thrall, Texas, where oil has been found in the serpentine rocks. It apparently has migrated there from source beds beneath the igneous rocks.

Fields found in the other classified structures are not of much commercial importance, although it is still possible to expect gas and oil to be found in commercial quantities in truncated and sealed strata or in reservoirs sealed with viscous hydrocarbons.

The geologist is quite familiar with type structures suitable for the formation of reservoirs and the trapping of gas and oil and most of those easily mapped have been found and developed. The industry is now in that period between development of easily found resources and the exploration for other oil fields to be found only through applied modern methods of geology and geophysics. The geological departments of the oil companies are ready to proceed with the finding of those hidden pools and stratigraphic traps whenever the economic situation governing the industry will justify the spending of money needed for such exploration work. It is very obvious the pools offering quick returns will be exploited first, but with the demand for crude oil remaining above 3,000,000 bbls. per day it is apparent the industry will have to resort to scientfic wildcatting soon.

Review of Petroleum Technology

The Third Annual Review of Petroleum Technology recently published by the Institute of Petroleum, Aldine House, Bradford Street, Strand, London, England, contains a series of 27 critical surveys written by experts in the various branches of the oil industry. Each survey is accompanied by a selected bibliography and enables the reader to obtain a clear outline of the progress made during 1936-1937 in the following fields of petroleum technology. Geology (general and regional), prospecting, drilling, production, transportation, refining, cracking, testing and utilization. The various main products of petroleum, motor fuel, heavy oils, lubricants and asphaltic bitumen receive separate and detailed treatment while an interesting article on special products draws attention to the increasing use of petroleum products in the electrical industry and the part played by pyrolysis and polymerization in the development of new synthetic compounds.

The scope of the book is further widened by the inclusion of chapters on automobile, aero and oil-engines, motor benzole, hydrogenation, synthetic fuels and the carbonization of coal and other retortable oil-yielding materials. Chapters on statistics and petroleum literature are also included.

This book contains 472 pages of text and 18 pages of index with nearly 2,500 bibliographical references. The book costs 10 shillings and 6 pence ($2.62) and may be ordered direct from the Institute of Petroleum at the address given above or through the Book Department of The Oil and Gas Journal.

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CONTINENTAL

Casing Removed by Hydraulic Power

By J. P. O'DONNELL

Hydraulic power is being employed by the Moore Producing Co., of Bolivar, N. Y., one of the largest independent operators in the Allegany field, in a simple, highly efficient method for the recovery of casing so firmly seated that it is impossible to remove by the conventional pole and tractor method. This method is particularly well adapted to water-flood properties where water under pressure is available at almost any location.

The method simply consists of turning water under pressures of 300 to 800 pounds per square inch into the capped casing string and allowing the pressure to build up until it is sufficient to raise the casing. The principle involved, as described by Winston L. Davis, superintendent, is simply that of hydraulics in that a pressure of so many pounds per square inch acts upon a surface of a given number of square inches. "In 6¼-inch casing, the cross sectional area is 30.68 square inches. This area is acted upon by whatever pressure is applied. Assuming this pressure to be 500 pounds per square inch, there would be 500 times 30.68, or 15,340 pounds, acting to push the casing upward.

Casing cap

"In the case of 4¼-inch casing set on hook wall packers, the area of a 4¼-inch circle is being acted upon by the applied pressure at the top of the string and that area which is the difference between the 6¼-inch hole and the 4¼-inch casing is being acted upon by the applied pressure plus the hydrostatic head at the bottom of the packer. Assuming the packer to be set at 1,000 feet and the applied pressure to be 500 pounds per square inch, there would be 500 times 14.19 square inches, the cross sectional area of the casing, or 7,095 pounds pushing upward at the top. In addition there would be the applied pressure plus the hydrostatic head pressure of 433 pounds per square inch, a total of 933 pounds per square inch, pushing upward at the packer. This area is equivalent to the difference between the cross sectional area of the casing and that of the hole, or 16.49 square inches in which, multiplied by 933, gives a pressure on the packer of 15,385 pounds. Thus a total pressure of 22,480 pounds is being exerted to push the casing upward."

Accompanying pictures taken on the Moore Producing Co.'s New York Oil Co. lease show the simple equipment required: The cap attached to the top of the casing; assembly at the well; a general view showing the 1-inch connecting line, and the tap made at the field line.

The cap is simply a regular casing collar or coupling with a steel plate welded on one end. Two 1-inch connections are welded into the plate, one for the admission of water and the other for the emission of air. A valve is connected to the air release nipple with an elbow and a short length of pipe (*A*). A full swing joint of sufficient length to provide clearance for the casing elevators is connected to the water intake nipple to allow for the vertical movement of the casing as it leaves the hole (*B*).

As on any water-flood property, water, under pressures ranging from 300 to more than 800 pounds per square inch, is available at any location on the Moore properties. A tap is made at either a 3-inch main or a 2-inch branch line and connected to the air intake nipple of the casing cap with 1-inch line. A swing joint is installed about one length of pipe from the well. Between this joint and the well a valve and union are installed, the valve usually being between the well and union. One or more lengths of pipe are laid on the ground to form a skid for the water line as the casing rises.

Operation of Method

With all connections made and the pulling pole and tractor rigged up in customary fashion, water is turned into the intake nipple and air allowed to vent through the release valve. After the water has filled the annular space below the point where the casing is frozen or the space below the packer and the casing itself, the air release valve is closed and pressure is allowed to build up in the hole. This pressure supplements the pulling power of the tractor winch and, if there are no leaks in the casing, it will rise slowly from the hole. Ordinarily after the casing has been raised a few feet by this method, it can be pulled without difficulty by the tractor; it has been found that raising the casing 5 to 6 feet is usually sufficient to break the seal.

The vertical movement of the casing can be controlled to some degree from either valve on the water line. However, in some instances the casing continues to rise after the water input has been stopped. In this case both valves on the water line are closed, the connection between them broken and the valve between the well and the broken union opened. This permits the pressure in the casing to blow off and stops the upward movement.

Assembly at the well

This method has been particularly effective in removing casing set on hook wall packers which has often proved impossible for a tractor alone. In one instance 973 feet of 4¼-inch casing had been set on a packer to shut off water at 950 feet. The pole and tractor were unable to move this string but it was pulled with the application of water pressure.

Discovery of the method was accidental. Inability to remove casing from an old producing well resulted in the decision to give it a trial as an open intake well. A cap was placed on the top of the casing and water turned into the hole. After sufficient pressure had been built up, the casing began to move upward. The cap was later made with the air release valve when it was found that in many cases air remaining in the casing compressed to form a cushion for the water pressure. The air valve was added after an attempt to raise the casing with an applied pressure of 800 pounds per square inch, equivalent to more than 24,000 pounds, had prove ineffective.

Hook-up for hydraulic casing pulling with 1-inch water line in the foreground

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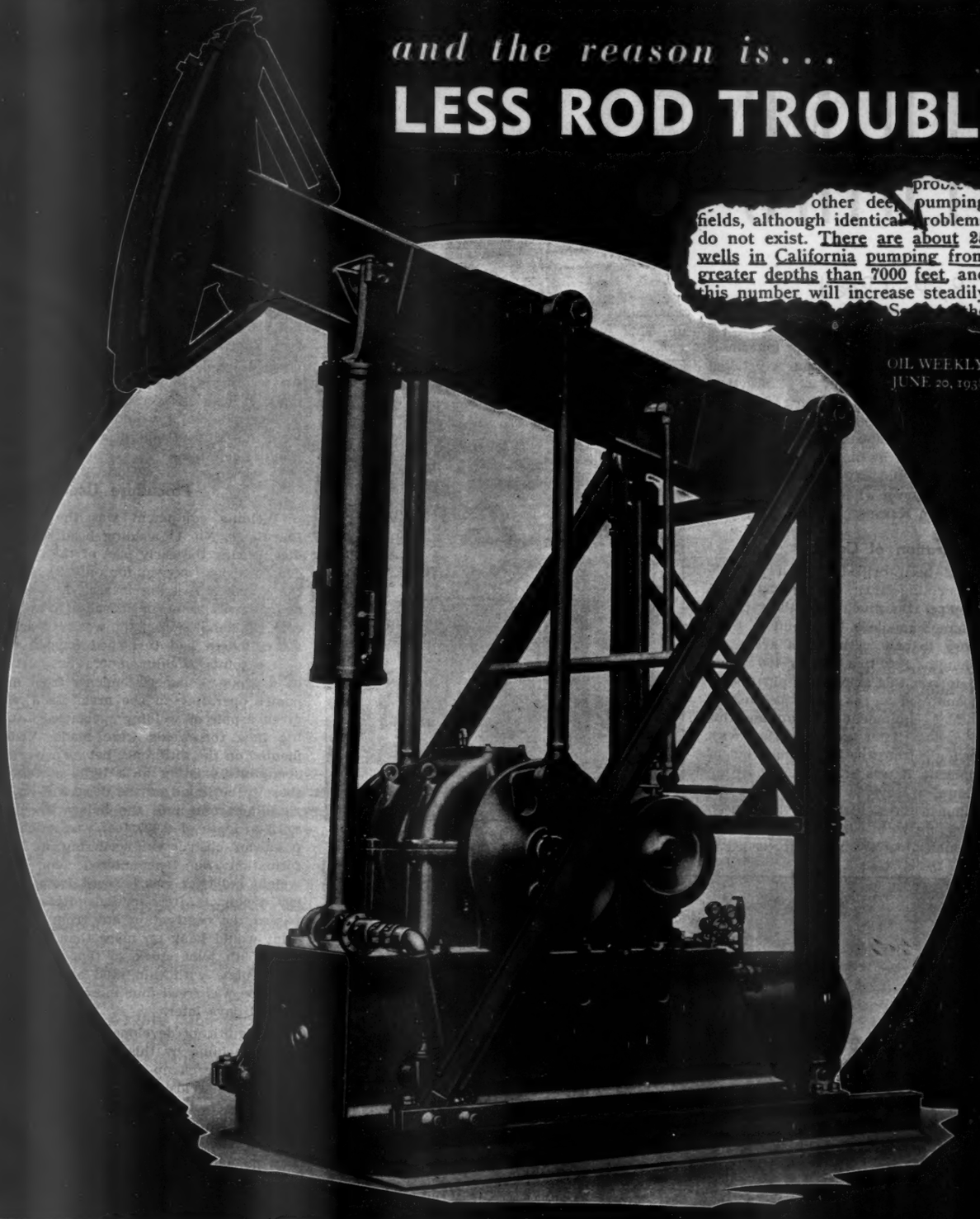
LESS ROD TROUBLE



...other deep pumping fields, although identical problems do not exist. There are about 25 wells in California pumping from greater depths than 7000 feet, and this number will increase steadily ...

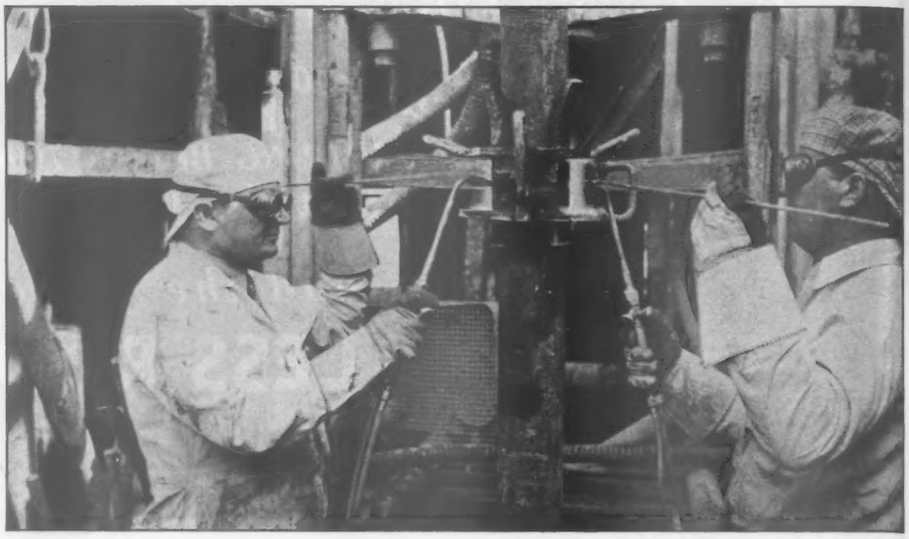
OIL WEEKLY
JUNE 20, 1938

REED ROLLER BIT COMPANY

P. O. DRAWER 2119, HOUSTON, TEXAS

CASING WELDING

By Paul Reed



Tack welding a joint with alignment clamp and spacer

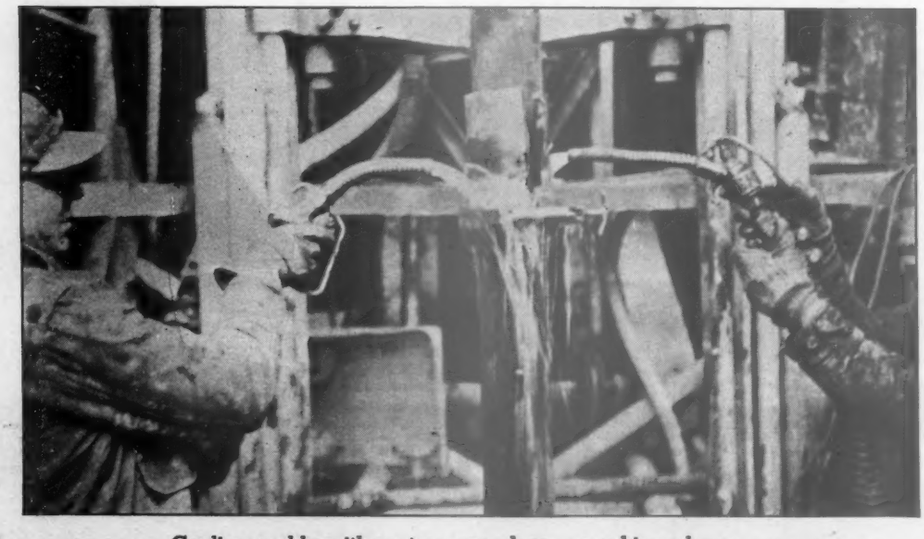
Because of the growing interest in the subject of casing welding, a detailed record of a day's operations may have practical value. For this reason, the following data are presented. These have been taken from a report accompanying a log of the day's work showing what happened minute by minute from 6 a.m. to 10:30 p.m. during the oxy-acetylene welding of 3,223 feet of pipe on a wildcat well drilled by a major company in Kansas.

Preparation of Casing

The well had been drilled with a portable unitized rotary drilling outfit. Casing was 5-inch OD, 16-pound pipe. Inasmuch as this type of drilling unit cannot handle a long joint of pipe, it was necessary to case with joints averaging 21½ feet in length. For this reason 150 joints were required to run this amount of pipe. Some delay was encountered at the outset because of a lack of suitable equipment for running this small size of casing. After experimenting with various means for getting the best results out of available equipment, it was 9:30 a.m. before the work got well under way.

Before coming to the well the joints had been cut for butt welding with a 30-degree bevel and a 3/32-inch shoulder. As the work proceeded it was found that this left too much space to fill up. This situation was corrected by having the roughnecks file the shoulders from all the pipe not yet run. After the bevel had been filed down to a sharp edge, the speed of welding was increased by 30 seconds per joint. Average time for welding a joint was 2 minutes and 20 seconds. It was believed that with a feather edge 20-degree bevel it would have been possible to weld this kind of pipe at an average rate of two minutes per joint.

Beginning of weld



Cooling welds with water poured on quenching clamp

Procedure Used

Welding equipment was the regular Linde four-flame, No. 11 welding head with W-22 handles. During the early part of the day, one cylinder furnished oxygen for only 24 welds. But as the speed of welding increased, consumption of oxygen was at a considerably more economical rate. On completion of the work it was found that six cylinders had furnished oxygen for a total of 150 joints. Welding operations were watched by a group of superintendents from major companies operating in the area. Each visitor was given a pair of welding spectacles to aid in seeing how the welds were made. Visitors commented on the difference between working under conditions existing at a light portable rig and those to be found on the derrick floor of a large rig. Pipe went into the hole without difficulty until a depth of 2,000 feet was reached; at this point an obstruction occurring in a limestone formation was encountered; tension on the weight indicator was lowered from 30,000 to 10,000 pounds. After several attempts, the pipe passed the obstruction but from there on each joint would hang up more than the one before. The 150th joint stuck so that it was necessary to circulate with thin mud at 10:30 p.m. After the pipe was freed four more joints were welded several days later.

A significant development in connection with casing welding by this method is the new type of quenching clamp which was used on this job to cool the welds. It is considered to be one of the prime factors contributing to the increased speed which was attained in casing this well, since it reduced cooling time by 50 to 60 per cent. The quenching clamp is made of cast copper, recessed on the inside to accommodate the bead of the weld. The heat of the weld is conducted through the inside wall of the copper water jacket to water which flows through the jacket; no water comes in direct contact with the weld or the heated area of the pipe.

Following is given an excerpt from the log of a day's work which shows a typical half hour's

Already . . . an Overwhelming SUCCESS!

The Drilling Equipment Directory

WITHIN thirty days after announcement of the Drilling Equipment Directory, over 100 leading manufacturers have signed contracts for advertising space in this book. Scores of other manufacturers also are planning to be represented.

So great has been the acceptance of the Drilling Equipment Directory that its success is already assured—four months before the actual "dead-line" for copy! This enthusiastic endorsement of the Directory by leaders of the industry is in itself evidence that the Directory will be widely read and used.

The objective behind this publication is, first and last, to do *an outstanding* selling job for you . . . at the lowest possible cost. To insure these results, we've designed, what we believe to be, the most complete and practical book of its kind ever to be published.

So why not make *YOUR* reservations* now. Write for complete details and advertising rates.

*Advertising not billable until April 1st, 1939.

Published by

The Petroleum Publishing Co.

211 S. Cheyenne St. Tulsa, Oklahoma

"Publishers of The Oil and Gas Journal"

● A New Publication

to be issued every two years by the publishers of The Oil and Gas Journal, the entire book to be devoted to drilling equipment. First issue, April 1st, 1939.

● Circulation

At least 6,000 copies of this publication will be distributed, without cost, to drilling contractors, tool pushers, general superintendents, chief engineers, drilling departments and purchasing agents of oil companies and supply companies handling drilling equipment throughout the world.

● Tabbed Sections

A new feature, designed for the convenience of the user. It makes it easy for your customers and prospects to obtain information on your products and is so complete that they will depend upon it as their principal guide when ordering equipment or seeking technical information. A modern answer to the needs of both the advertiser and the user.

● Engineering Data

One of the outstanding features of the Directory is the editorial sections consisting of complete tables, engineering data and A. P. I. specifications. This abundance of information will appear after each tab and will be directly related to the equipment covered in each of the tabbed sections.

● Buyers' Guide

The Buyers' Guide section will consist of a listing of *all* equipment used in drilling and the names and addresses of all manufacturers of this equipment. This will be the only complete Buyers' Guide of its kind to be found anywhere. All manufacturers will be listed, whether they advertise or not.

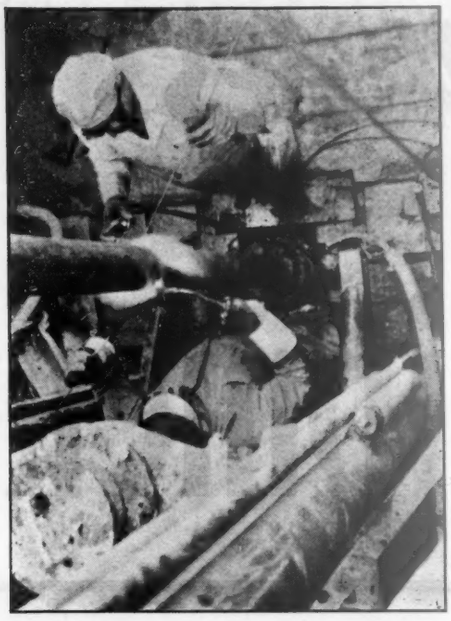
● Advertising

. . . the Directory offers a wide range of advertising opportunities, affording small space in the Buyers' Guide at rates as low as $30.00 per insertion. Full page advertisements can be had from $100.00 to $200.00 per page, depending upon the number of pages used. These ads will be classified alphabetically under the tabbed sections according to the product featured. Eliminates "searching"—makes "finding" easy and convenient.

record of work done after operations had been properly organized:

RECORD OF WORK

Time			No. of joints in hole
3.03	p.m. Joint complete		70
3.04½	p.m. Weld complete	3.06 NM	
3.06½	p.m. Joint complete		71
3.08½	p.m. Weld complete	3.11 NM	
3.13	p.m. Joint complete		72
3.13½	p.m. Weld complete	3.15½	
3.17½	p.m. Joint complete		73
3.18	p.m. Weld complete	3.20½ NM	
3.22	p.m. Joint complete		74
3.23	p.m. Weld complete	3.25 NM	
3.28½	p.m. Joint complete		75
3.27½	p.m. Weld complete	3.29½ NM	
3.31	p.m. Joint complete		76



Welding operation seen from derrick

The following has been taken at random from the detailed records of the time taken to weld a joint:

TIME CONSUMED

30 seconds to tack weld.
15 seconds to remove clamp and brush weld.
85 seconds completing weld.
2 minutes 10 seconds total for weld. This actual total time.
7 seconds to set cooling clamp and get hose.
60 seconds to cool with water.
30 seconds to lower joint and set slips.
10 seconds to raise elevators.
30 seconds to bring in and clamp joint in clamp in position (this often took much longer due to lining up difficulties).
2 minutes, 18 seconds to make a fast weld.

Completing the weld

Results obtained are reported to have been satisfactory and those concerned with the welding of this string of casing believe this operation to be a significant example of the use of the oxy-acetylene method in butt welding of casing.

Engineers Exchange Data on Cathodic Protection

By WALTER F. ROGERS
Research Corrosion Engineer, Gulf Oil Corp., Houston

Although the subject of cathodic protection in the pipe line industry dates only since 1931 the results obtained have accelerated interest in this method of corrosion prevention. Almost without exception the proper application of forced electrical drainage of pipe lines has been found to result in complete cessation of electrical corrosion attack. Although this would indicate that the problem of protecting pipe lines has been solved much remains to be done before the proper place of the method in industry is determined. In this not only is the oil pipe line business concerned but all others having metallic buried conduits such as water mains, gas lines, metallic sheathed electrical cables, etc., should have a like concern.

As would be expected, it has been found that a common meeting ground is advisable for those engineers engaged in installing cathodic protection systems. Such a need is not filled exactly by the proceedings of any one trade association, although in their own way each of the gas, water, and oil associations can study the problem separately. In order, however, for the gas line cathodic protection engineer to discuss this particular problem with the oil line engineer dealing with the same subject, it has been found advisable to formulate what might be called an interassociation study group. This was done on March 9, 1938, at a meeting in Houston, Tex., attended by representatives of oil, gas, water, and telegraph and telephone companies actively engaged in installing cathodic protection. The group has the name Mid-Continent Cathodic Protection Association. The officers are L. F. Scherer, Texas Pipe Line Co., Houston, chairman; W. F. Rogers, Gulf Oil Corp., Houston, secretary. The affairs of the body are formulated by a committee of five who, including the chairman and secretary are O. C. Mudd, Shell Pipe Line Co., St. Louis, Mo.; J. C. Stirling, Stanolind Pipe Line Co., Tulsa, and E. R. Cunningham, United Gas Pipe Line Co., Houston. At the present time there are no dues and attendance at the meetings is open to the public.

Importance of Data Exchange

The question might be asked as to the necessity or advisability of such an organization? Why cannot the subject be handled by each individual company as it sees fit? If each company operated lines apart from any others, not crossing or touching any other buried metallic structure there would be no need for this organization. The imposing of forced electrical drainage through earth circuits, however, means necessarily affecting all structures within the drainage area. The size of the affected area may be controlled at will but nevertheless all within it became some part of it. The installation of forced electrical drainage in an area may result in not only protecting the lines for which it was designed but also by virtue of the particular arrangement of the pipes in the area protect them all. On the other hand, due again to the arrangement of the network, some of the pipes may be adversely affected. Therefore, when installing cathodic protection it is advisable to notify the owners of all pipe lines within the drainage area. This permits the checking of all pipe original potentials and enables the final value of pipe potentials to be adjusted to the satisfaction of all.

One of the primary purposes of this organization is to promote the proper notification of others when installation of a cathodic protection unit is made. The association has no authority to force notification but it can and does attempt to impress the advisability of notification and to determine the most satisfactory working procedure in giving such notice.

Intercompany Cooperation

The most difficult part of giving notice that cathodic protection is to be installed in a given area is to determine whom to notify. This arises from the large number of pipe lines of all types in certain areas and the physical impossibility of tracing each to its termination to determine ownership. As part of its task the association is attempting to compile lists of all pipe line companies and the territory in which each operates.

After notification is made it becomes necessary for the interested parties to make their agreements as to the best handling of each interest in the drainage network. It may be that simple bonding of foreign lines crossing the protected one will satisfactorily solve the problem, or it may be the foreign line will also desire to receive material protection which can only be obtained by increasing the size of the cathodic protection equipment. Here again the association has no powers of authority to settle disputed cases. It can, however, through discussion before the association of the handling of typical cases, promote the best interests of all concerned.

As another part of its activities the association attempts to foster the subject and to determine its true value to industry. This is done through educational programs. These follow the usual type of technical sessions wherein papers pertinent to the subject are presented by the members. To date one session of this type has been held and it is planned to hold others at six-month intervals. The next meeting will probably be held during October or November of 1938.

The active cooperation of all interested parties will be welcomed by the association as the good of the whole can only be served by the active efforts of the individuals.

Dehydrogenation of Lower Paraffins Over Activated Alumina Catalysts

Referring to the "Dehydrogenation of the Lower Paraffins Over Activated Alumina Catalysts," by J. Burgin, H. Groll, and R. M. Roberts, which appeared in the September 8 issue, the authors call attention to the fact that in Table 3, Column 1, second line, under "propane," should read: "Average conversion to propene per cent"; second line under "normal butane" should read: "Average conversion to normal butene per cent"; in Table 3, Column 1, third item under "isobutane" should read: "Average ratio of isobutene to total olefins."

USE *LARKIN* SPIDERS

They're Engineered to Hold *Longer* Strings Safely

Larkin Spiders are strong enough to safely hold *any* length string of casing. In a test conducted by the Robert W. Hunt Company, Engineers, a 9⅝" OD Split Spider withstood a total load of 353 tons without distortion. This is the equivalent of supporting 3.3 miles of 9⅝" OD 40 lb. casing!

Operators are particularly enthusiastic about the new Larkin "Standard" Spider (made in Solid type only), which is inexpensive, practical, and easy to handle, with the result that in a great many cases it is supplanting the use of casing clamps.

Larkin "Hevi Duty" Spiders are available in either Solid or Split type. Whether you specify this or the Larkin "Standard", you'll get an engineered spider that's strong, that's dependable, that'll HOLD!

CONTRACTORS—It is cheaper to buy and own a Larkin Spider than it is to rent one! Write for prices.

At all Supply Stores.

Warehouse stock at Tulsa, Okla., Houston, Kilgore, Odessa and Corpus Christi, Texas, Shreveport, La., and Great Bend, Kansas.

LARKIN PACKER COMPANY, INC., ST. LOUIS.

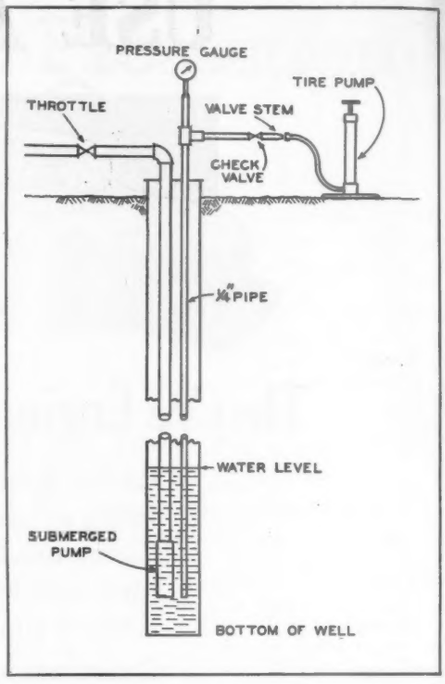
LARKIN PACKER CO.

Refinery Installs Unique Level Indicator for Pump

Since the procuring of adequate water supplies and the operation of water pumping equipment is of great importance in the operation of pipe line stations, a device being used by one refinery might well be adopted for pipe line use. At one refinery in West Texas part of its water supply is obtained from a well using a submerged pump for lifting. To eliminate the water from being pumped too low and thereby damaging the pump, a device has been installed through which the height of the liquid level in the well can always be accurately determined.

It consists of a quarter-inch line running to near the bottom of the well; a pressure gauge installed on one side of a tee is placed in the line, and on the other side a check valve and valve stem are attached to a short length of pipe. To determine the height of water in the well the water in the submerged portion of the quarter-inch pipe is displaced by air introduced into the line by means of an automobile tire pump. The check valve is then closed, to prevent air leakage through the valve, and as long as the water level in the well remains constant the pressure gauge will remain unchanged. If the level should fall, the gauge reading will be lowered accordingly for any air in addition to that required to displace the water from the tubing will exit through the bottom of the pipe and the pressure thereby reduced. A throttle is placed in the water line so that if the level is becoming too low the flow may be checked.

The reading taken on the gauge is in pounds per square inch but if it is desired to know the height of the water in the well this may be obtained by dividing the gauge reading by .433



Arrangement of equipment for water-level indicator

(the factor for converting pounds per square inch into feet of water). However, the latter step is not necessary after a relationship is established between the water height and gauge reading.

System of Taking Reservoir Pressures In Jones Sand of Schuler Field

A system of taking reservoir pressures in the Jones sand of the Schuler field of Arkansas has been devised which it is believed will reflect to a greater degree of accuracy the true reservoir condition of the pool.

At a meeting of engineers August 30, and at which all companies having engineers were represented, a plan was worked out to the satisfaction of both company engineers and the Arkansas Board of Conservation engineers.

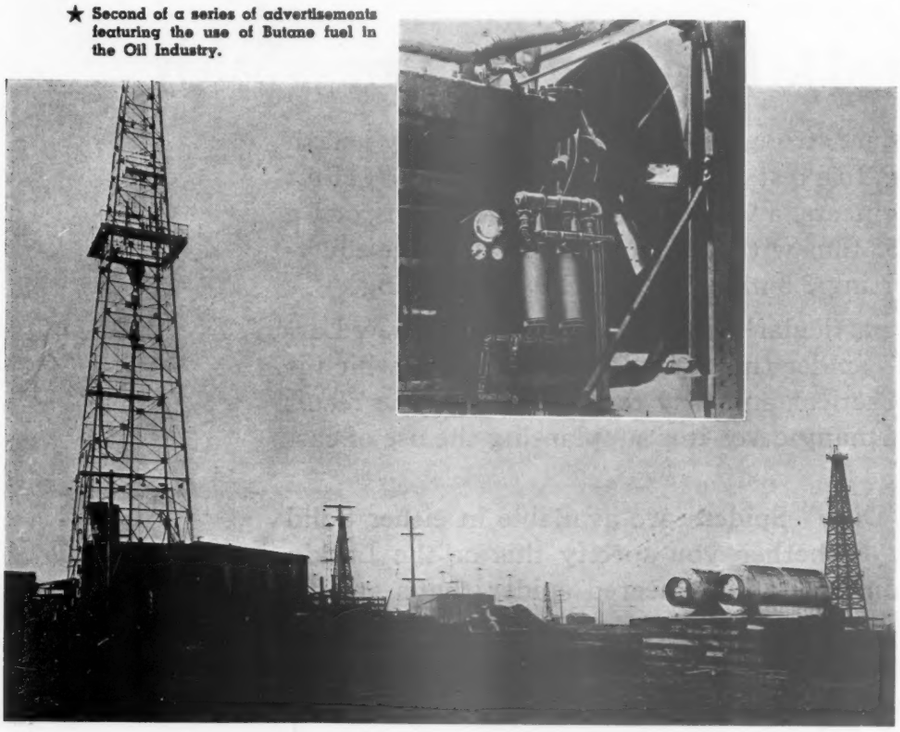
The field was divided into four sections, beginning at the southeastern extremity and traveling northwestward. As the field is developed, other sections can be added without disturbing the key wells in the sections already selected. With the 70 wells producing and at the present rate of development, it is believed that it will be necessary to add a pressure section each 90-day period.

The objective is to determine with the same reservoir pressure gauge all pressures in the field. The gauge to be used is the standard depth pressure recorder of the Arkansas Board of Conservation.

The pressure recorder of the conservation board will be calibrated with all pressure recorders of other companies in the testing vessel of the Phillips Petroleum Co. and Lion Oil Refining Co. the first Monday of each month and the taking of pressures will commence the next day.

The Board of Conservation will request two companies to furnish one engineer each to augment the pressure crew. Two more companies will be requested to furnish one roustabout each to precede the pressure crew and have the christmas tree broken down and the lubricator installed.

★ Second of a series of advertisements featuring the use of Butane fuel in the Oil Industry.



BUTANE IS PUMPED FROM TRUCKS TO TANKS AND PIPED FROM TANKS TO ENGINES

Above is a typical oil field scene with BUTANE tanks at right. BUTANE is piped from these tanks to engines used for portable drilling and servicing.

The inset shows ENSIGN BUTANE Heat Exchangers on drilling engines.

ENSIGN Equipment is used on a majority of the leading BUTANE-powered units in the Oil Industry. ENSIGN is the leader in BUTANE carbureting products. Write the factory or branches for latest literature covering BUTANE developments.

ENSIGN CARBURETOR CO., LTD.
LOS ANGELES · DALLAS · CHICAGO

QUESTIONS ON TECHNOLOGY

By Charles K. Francis, Ph. D., Technical Editor

Influence of Sodium Sulfides When Sweetening With Copper Chloride

I would deeply appreciate it if you could explain the difference in scrubbing sour kerosene distillate with sodium hydroxide and also scrubbing with sodium sulfide. I have always understood that sodium hydroxide was the ideal scrubbing agent until the other day I ran across a refiner who used sodium sulfide solution as scrubbing agent for a distillate that he treated by running through copper chloride and fuller's earth. Sodium sulfide hydrolizes to form sodium hydroxide and hydrogen sulfide, and consequently gives an alkaline solution, but did not know that this solution would be as effective as sodium hydroxide.—H. C.

Hydrogen sulfide should be removed from any petroleum product before contacting with the essential reagent, which in this instance is copper chloride. Frequently when hydrogen sulfide is present there is also some free sulfur. The preliminary wash with water and caustic soda solution is usually sufficient.

Should elementary sulfur be present. it is necessary for its removal to have sodium polysulfide present in the caustic soda solution. The spent caustic often contains enough polysulfide and may be maintained at a satisfactory concentration by discarding a part of the solution, then adding enough fresh caustic soda to bring it back to full strength. When it is necessary to prepare a caustic polysulfide solution this formula will serve:

FREE SULFUR REMOVING SOLUTION

	Per cent, weight
Caustic soda	10-20
Sodium sulfide (Na_2S)	10
Sulfur	1

When hydrogen sulfide and sulfur are not removed in the preliminary stage, the sulfur interaction consumes the copper.

A wash with alkaline solution of sodium sulfide, after the copper chloride stage, is applied to the product for the purpose of removing any traces of the copper solution or copper compounds that may be present in the sweetened gasoline or kerosene.

Sodium sulfide is considered to act in additional ways. It hastens the reaction; tends to convert mercaptans to disulfides and improves color stability.

The action of caustic soda as a washing agent has been investigated by C. M. Ridgeway, who has made these conclusions. "The information available at the present time indicates an appreciable saving in tetraethyl lead can be realized by the removal of sulfur compounds. It is also apparent that caustic soda can be used for the extraction of mercaptans and that the volume, concentration, and temperature of the caustic soda are very important. The amount of mercaptan sulfur that can be removed and the effect of its removal upon the tetraethyl lead response of the gasoline depends upon the type of mercaptans present and the nature of the motor fuel. Hence, the economic advantage of caustic washing gasolines must be determined for each individual stock by evaluating the influence of the above mentioned factors. In closing, it might be well to point out that it is most difficult, if not impossible, to conduct batch-treating operations without experiencing a loss of light ends so that a serious error is introduced when an effort is made to determine comparative tetraethyl lead responses of gasolines so treated. Our experience indicates that a closed continuous counter-current system must be used for this work."

References: Ramsey & Whitehurst, The Oil and Gas Journal, Dec. 29, 1927, p. 250. Birch & Morris, J. Chem. Soc., 127, 898, 1925. Schultz & Buell, The Oil and Gas Journal, Oct. 17, 1935, p. 42.

Petroleum Ether Described Under Federal Specifications

Is petroleum ether a definite product which is sold by recognized specifications? Any details you may have concerning the commercial standing of this product will be appreciated.—E. T. E.

Before gasoline became a product of commercial importance the very volatile first fraction to condense from the still was known by several names, among these were cymogene, rhigolene, and petroleum ether; many refiners used the word naphtha for this product. One of the first uses for petroleum ether was for dissolving rubber and gums, so it was natural that specifications were soon developed. The first was very broad being simply color, clear water white, and specific gravity, 0.590 to 0.666, equivalent to about 81° to 110° A.P.I. Now there are two grades quite definitely specified by federal specifications, which are summarized in the following:

Petroleum ether shall be composed solely of low boiling hydrocarbon distillates, not darker than 25 Saybolt color, free from sediment and moisture, spot test and acidity negative, the residue from 50 cc. not to exceed 0.0005 gram, and free from benzene hydrocarbons. There shall be two grades, with the above properties common to both grades, distinguished by boiling range. Grade A—Shall distill completely between 86° and 176° F. Not less than 90 per cent shall be recovered on distillation. Grade B—Shall distill completely between 86° and 149° F. Not less than 85 per cent shall be recovered on distillation. Test methods—See Federal Specifications VV-L-791 for Color, Distillation, and Acidity. See U. S. Pharmacopoeia for Benzene Hydrocarbons, Spot Test. There shall be no greasy stain on clean filter paper from 10 cc. evaporated at room temperature. The odor of the residue shall not be disagreeable nor sulfureted.

Reference. Federal Standard Stock Catalog, Sec. IV, O-E-751.

CHEMICALS FOR THE PETROLEUM INDUSTRY

Potassium Permanganate

Use—Oxidizing and deodorizing agent in manufacture of special products.

Form—Dark purple crystals.

Formula—$KMnO_4$.

Molecular weight—158.03.

Specific gravity—2.7032.

Decomposition point—464° F.

Solubility—Soluble in 15 parts of cold water.

LIMITATIONS

Total impurities, max. per cent, 0.001.

Note: Obtainable in several grades.

True Color of Lubricating Oil

What is the meaning of "true color" of lubricating oil? How is this color determined?—A. W. T.

The original work on true color of lubricating oils was done by Parsons and Wilson. The fundamental principle of the method is that thin films of accurately known thickness are observed. They worked with a Duboscq colorimeter, which permits the depth of oil in the field of vision to be varied at will. The observations being made with the same reference standard, which may be "light standard" or "dark standard," the plunger being brought to a point where the two fields are in exact match. The depth of color is based on Beer's law, i.e.—The effect of doubling the concentration of coloring matter is the same as that of doubling the thickness.

CELLS FOR TRUE COLOR

Cell No.	Free color range	Cell thickness
1	120 to 400	1.10 mm. ± 5%
2	400 to 1,100	0.38 mm. ± 5%
3	1,100 to 4,500	0.14 mm. ± 5%

Weir, Houghton and Majewski supply the formula for calculating the true color from the observation by means of a Duboscq colorimeter. The oil sample is diluted with a 50-50 mixture of white oil and extraction naphtha to a color approximately 2½ N.P.A., and then compared with a 20-mm. depth of the standard oil (Manchester spindle). The true color is calculated from—

$$\text{True color} = \frac{\text{2 mm.} \times \text{diluction}}{\text{av. of 6 readings of unknown}} \times \text{true color of standard,}$$

in which

$$\text{Dilution} = \frac{\text{cc. of mixture}}{\text{cc. of unknown oil}}$$

The true color scale is based in the Weir, Houghton and Majewski adaptation upon a standard color oil 2.6 N.P.A. color, and finally upon a No. 2 Robinson glass. The standard oil is calibrated in terms of the glass, so that when 53.6 mm. of the standard matches the Robinson glass, the standard oil is said to have a true color of 10.

The work is facilitated by means of charts described in the references.

References: True Color, Parsons and Wilson, Ind. Eng. Chem., 14, 269, 1922. Weir, Houghton and Majewski, Amer. Pet. Inst., 1930, Sec. 3, p. 60.

Arbuckle Oil, Marshall County, Okla.

Will you, if possible, kindly furnish an analysis of the Arbuckle oil produced in Marshall County, Oklahoma? What is the approximate depth of the wells?—O. M. A.

The analysis reported is from the U. S. Bureau of Mines.

ANALYSIS OF ARBUCKLE OIL, MARSHALL COUNTY, OKLAHOMA

Gravity	46.3
Sulfur, per cent	0.06
Visc. at 70° F.	37.4
Visc. at 100° F.	34.6
Pour, °F.	Below 5

Distillation—	Per cent	Gravity, A.P.I.
Gasoline	46.2	62.8
Kerosene	17.8	44.1
Gas oil	9.4	36.9
Light lube dist.	8.2	33.2
Medium lube dist.	3.4	30.2

The oil produced in Marshall County is found at shallow depths, 500 to 800 feet, the volume is not large, better than 42 gravity and consequently yields over 40 per cent of high gravity gasoline.

PROBLEMS FROM READERS

Edited by L. G. E. Bignell

Gravel Packing For Oil Wells

I have noted some reference to the use of gravel pack around the casing or liner at the bottom of oil wells. Is this method similar to the one used for completion of water wells? Has it been successful in oil wells?—E. D. E.

The use of gravel opposite the producing formation has been tried in several oil fields where the oil is coming from soft sand formations. In such formations there is a tendency for the sand to be washed into the bottom of the wells and accumulate and this necessitates rather frequent cleanout jobs and it is with the hopes of eliminating some of this cleanout work that the gravel has been used. Where perforated liners are used gravel will tend to keep the screens or slots clean as the sand is held back in the pore spaces between the gravel and this gives longer life to the production periods between cleanouts. The method used for oil wells is much the same as those applied to water wells.

There are two general methods used in placing gravel in the bottom of wells. One is known as the reverse circulation system and the other as the normal circulation system. With the reverse circulation system the gravel is injected between the casing and drill pipe on which the liner has been run and through which fluid returns to the surface, and in the normal circulation system the gravel is pumped down inside the tubing and the fluid returns between the tubing and casing. The selection of either method will depend upon the subsurface conditions and the type of equipment used to produce the oil.

The gravel pack has been used successfully in some California fields and in the Oklahoma City field, Oklahoma. The bottom of the hole has been reamed in each instance to provide space for the gravel. For this purpose wall scrapers are used and the size of the hole after enlargement should have a direct ratio to the diameter of the liner used in the well. Experience has shown that there is no special advantage in enlarging the hole greatly before running the gravel. For instance if a 6⅝-inch diameter liner is to be used the hole need not be enlarged to more than 16-inch diameter to give effective results with gravel packing. Experiments have been tried with 20-inch holes but no special advantages have been noted and as it takes more time and costs more to ream the hole to the greater diameter it is not deemed necessary.

Uren and others have shown that the larger the diameter of the hole in the producing formation the greater the flow of oil into the well and this is one phase of gravel packing to be given consideration but it has been found necessary to make careful selection of the gravel to be used and this seems to be a more important factor than hole diameter in soft sand formations.

There are factors to be considered in selecting the gravel with relation to the size openings in the liner which are very important. Slotted pipe has been generally used for gravel packed wells and the gravel selected must be large enough to remain outside of the liner if the job is to be effective. However, it is not desirable to select too coarse a gravel for this purpose because it has been found that large gravel may bridge between tubing and liner.

When the gravel is delivered at the well it is necessary to wash and screen it even though it has been previously sized at the gravel pit. This precaution has been found necessary to guard against over and undersize gravel being used and also to eliminate dirt and clay which might be mixed with the gravel as delivered or shoveled from the stock pile on the location. Some interesting data on the behavior of sand grains in packing around screened liners has been recorded by C. J. Coberly in his paper, "Selection of Screen Openings for Unconsolidated Sands," presented before the annual meeting of the A.P.I. at Chicago in November, 1937.

The gravel is introduced in the annular space between the casing and tubing in the reverse circulation method and may be dumped in batches and washed down by pumping mud fluid above each batch, or the gravel may be mixed with the mud of low viscosity which will allow the gravel to drop freely but at the same time retard its fall so that it does not tend to pack. Aqua gel may be mixed with the mud to retain it at a viscosity of about 30 seconds as measured with a Marsh funnel. If the admixture is used about 4 per cent by weight is added.

As the gravel packs in the space outside of the liner at the bottom of the hole the mud escapes through a special shoe placed on the lower end of the liner. The slots in the liner are usually closed with a shell of special cement which remains in place until the gravel packing operation is completed. It is then drilled out and the slots are opened to permit entrance of oil from the formation. The mud that enters the inside of the liner through the special shoe passes upward to the surface and after all gravel is placed the mud is washed out with clear water.

One means of introducing gravel into the space between tubing and casing is to connect two lengths of pipe to the opposite sides of the casing in such a manner that they will serve as lubricators. At the upper end of each lubricator pipe a funnel and valve is placed with another valve at the bottom of the lubricator. The funnel is at proper height above the derrick floor to permit the driller to feed gravel into it and as the lower valve is closed and the upper one open the gravel will fill the lubricator. When the lubricator on one side of the casing is filled the man in the cellar beneath the derrick floor will open the lower valve and the man on the derrick close the upper valve and the gravel will slide into the space between tubing and casing and fall to the bottom of the hole in the space outside the liner. While one lubricator is being emptied the other is being filled.

In the Oklahoma City field, gravel packing was done by normal circulation method. The gravel was pumped down inside the tubing and escaped through a shoe and gradually filled the hole from the bottom upward. This method was used because it was known the soft Wilcox sand caved easily and to avoid breaking it down by washing in the gravel from the top the normal circulation method was tried. The gravel replaced the fluid in the bottom of the hole and it was washed down the tubing by oil similar to that produced from the formation. The gravel and oil mixture was handled by a slush pump in the same manner as cement slurry.

The slotted liner or screen pipe is carried on the bottom of the tubing string which is screwed into a left-hand connection in a special ball type back-pressure valve in a shoe with several large openings through which the gravel and oil escape into the hole behind the liner. The openings in the liner are not closed in this operation as they are when reverse circulation method is used so the fluid used to carry the gravel into place can escape into the liner and upward around the tubing. A packer is set between the upper end of the liner and the inside of the casing. When the cavity at the bottom of the well is filled with gravel the tubing may be removed by breaking the connection at the left-hand thread in the top of the special shoe.

The gravel used for any packing job must be clean and well sized. For the reverse circulation jobs in California gravel passing through one-quarter and remaining on three-eighths inch screens was generally used but some gravel as large as three-quarters inch size has been tried. There is a tendency to restrict the size to one-half inch maximum for the reverse circulation method.

In the Oklahoma City wells, using normal circulation method, the gravel ranged from three-thirty-seconds inch diameter to slightly over one-eighth inch size.

One of the many things to be considered in selecting gravel for packing wells is uniformity of size and the relative value of the size of the grain to the opening in the liners. If it is desired to use a larger slot in the liner coarser gravel can be used but there is a limit even in that direction because if the gravel used is too coarse it is difficult to place and if it can be placed successfully it may not be satisfactory in operation because it may provide openings between grains that do not bear a proper ratio to the grain size of the formation sand. If the sand is very fine and the gravel too coarse the sand may pack in the pores between grains and cause trouble. Channeling between gravel grains may result if the openings are too large because if one set of openings are closed the fluid will tend to increase its velocity in escaping into the liner and wash sand ahead of it and into the flow string through which the oil is produced. If the well is being pumped this sand would cause undue wear of moving parts and the main purpose of the gravel packing would be lost.

Some consideration is being given to placing gravel by using centrifugal pumps. Pumps for such purpose would have to be specially designed to accommodate both the reverse and normal circulation methods of placing gravel and also to take into consideration the producing conditions, bottom-hole pressures and other factors.

One problem as yet unsolved is a means of making measurements of the volume of the cavity at the bottom of the hole. With a good knowledge of sand conditions it is possible to calculate with a fair degree of accuracy the volume of gravel to be used but in cavey, soft sand formations the sand is liable to slough off between partings and make the hole very irregular in size. If the partings are of shale and it dissolves and breaks off the sand above is not supported and a cavity will result which may be of considerable size and require special attention to fill properly with gravel.

FIELD OPERATIONS

Summarizing the Week's Developments

TEXAS—K.M.A. pool in Wichita County was extended 4 miles, and definitely into Wilbarger County, and the Holliday Canyon sand pool in Wichita County was given an extension. An increase of 23 rigs and wells drilling over the previous week is noted in the East Texas field. Flag Lake pool in Henderson County was extended a mile. In West Texas the Denver area in southern Yoakum County was extended 2 miles. The largest completion reported from West Texas was a 3,339-bbl. well of Gulf Oil Corp. in the Waddell field, Crane County. Houston may yet have a town lot pool as the Eureka field completions approach nearer and nearer to the city limits. In Southwest Texas a Government Wells sand pool was opened in McMullen County. The shallow Ezzell field was extended 6,000 feet on the McMullen County side of the field. A new sand in the West Saxet field was opened by a 225-bbl. well at 4,070-75 feet.

LA-ARK-TEX—New producing sands were opened in the Port Barre pool in St. Landry Parish and on the Venice dome in Plaquemines Parish in Coastal Louisiana. A wildcat 7 miles across the city from the Shreveport discovery well is attracting much attention. A 780-bbl. well in the "D" sand in Cotton Valley is a feature. A southern outpost in the Jefferson County, Texas, side of the Rodessa field is good for 192 bbls. initially.

OKLAHOMA—At the opening of the week the most closely watched well in the state was Champlin Refining Co.'s wildcat in Section 4-24-8w, in Garfield County. It had shown a large volume of gas and some oil from the Wilcox sand and looks like a pool opener. A test north of Britton, in Section 21-13-3w, Oklahoma County, was also interesting, while a southern Caddo County test was showing enough to warrant a scurry for leases. A wildcat in Section 4-12-3w, northwest of Oklahoma City, was completed for 288 bbls. a day at 6,739-65 feet but the production at that depth was not large enough to make the area very attractive.

KANSAS—Lloyd, Frost & Study completed a 5,964-bbl. well in Section 33-31-3e, Cowley County, in Arbuckle lime at 3,205-26½ feet. A Mississippi lime pool was opened in Ford County (the first production in that county), and another was opened in Woodson County. The most northwesterly drilling well in the state, in Norton County, was abandoned as dry at 3,801 feet. Two Stafford County wildcats were giving indications of opening up new productive acreage. A 743-bbl. well was completed in the far western Shallow Water pool in Scott County.

MICHIGAN—Pipe line proration has been found necessary in southwestern Michigan fields. Five wells in the Freeman pool in Clare County are producing 6,368 bbls. a day.

ILLINOIS—Fifty-one oil wells were added to the Illinois fields. Big wells are reported from Township 2s-7e in Wayne County.

Completions in All Fields

(Week Ending September 24, 1938)

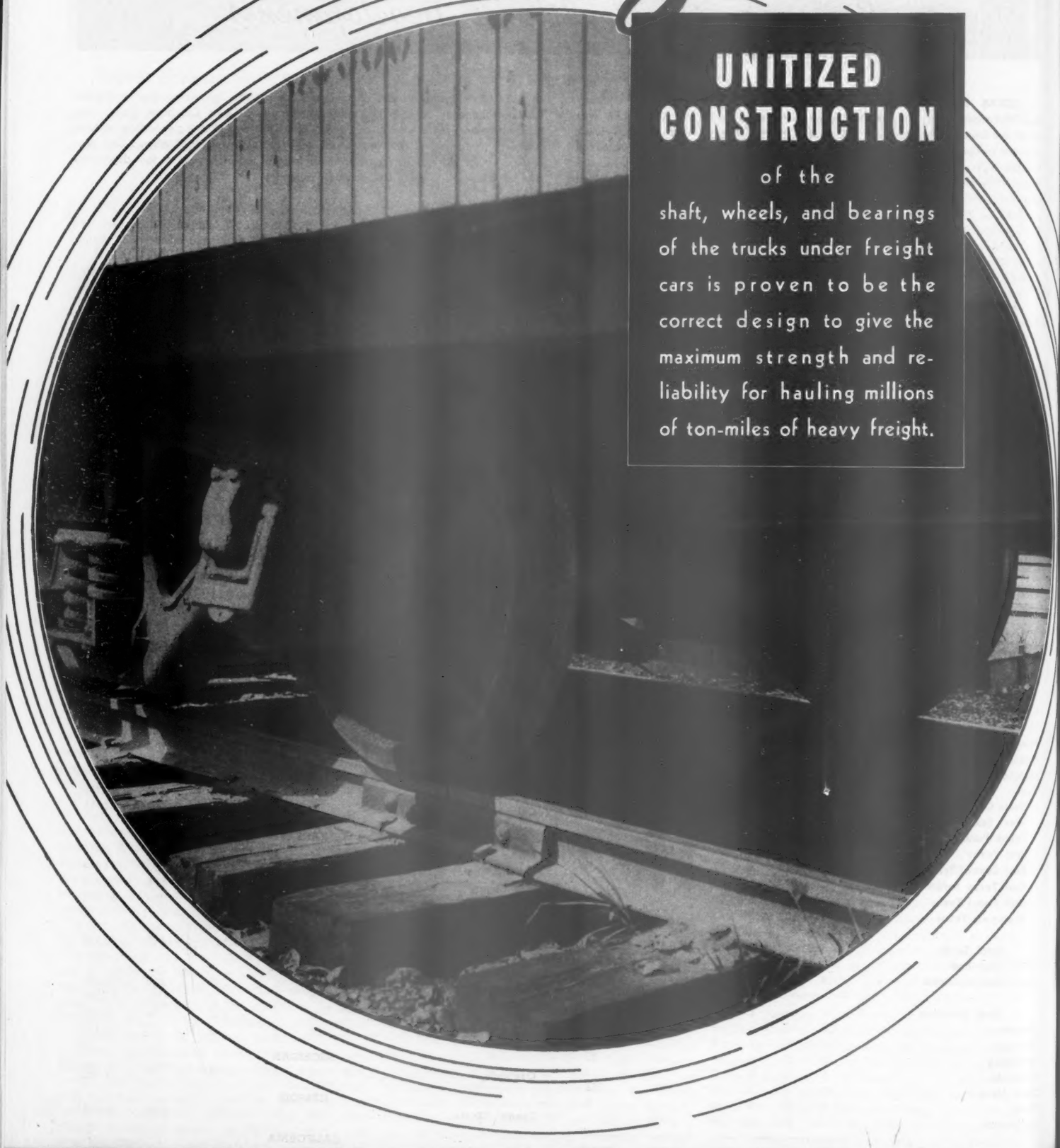
	Oil	Gas	Dry	Total	1938 total comp. to date	1937 total comp. to date
N. Y., Pa., and W. Va.	40	13	3	56	2,760	3,339
Ohio	6	11	7	24	733	882
Indiana	0	0	0	0	70	70
Kentucky	11	0	6	17	646	454
Illinois	51	0	9	60	1,098	143
Michigan	13	0	7	20	628	571
Kansas	25	1	12	38	1,194	1,903
Oklahoma	15	1	13	29	1,281	2,047
Texas:						
North Central Texas	30	1	22	53	2,346	2,107
West Texas	30	0	3	33	1,451	1,999
Texas Panhandle	10	3	0	13	429	555
East Texas	21	0	1	22	1,431	1,723
East Central Texas	2	1	4	7	260	524
East Texas Border	2	0	0	2	107	268
Gulf Coast Texas	23	0	6	29	981	1,136
Southwest Texas	38	0	5	43	1,529	2,434
Total Texas	156	5	41	202	8,534	10,746
North Louisiana	6	5	1	12	474	481
Gulf Coast Louisiana	6	0	6	12	351	339
Total Louisiana	12	5	7	24	825	820
Arkansas	2	2	0	4	176	112
Montana	1	0	1	2	75	163
Wyoming	3	0	1	4	117	82
Colorado	0	0	0	0	9	16
New Mexico	12	0	1	13	417	556
Utah	0	0	0	0	2	2
California	23	0	5	28	974	1,112
Total United States	370	38	113	521	19,539	23,018
Total previous week	402	36	127	565		
Difference	32	2	14	44		

Outstanding Fields--Highlights

(Week Ending September 24, 1938)

FIELD—	Rigs up	Wells drlg.	Weekly oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS						
K.M.A.	72	87	11	8,946	791	15,300
Hastings	3	4	1	3	583	18,715
Ector County	13	66	12	11,471	1,278	40,248
Winkler County	6	12	2	936	1,699	35,800
Saxet	2	6	0	0	618	28,419
OKLAHOMA						
St. Louis	6	28	4	1,320	691	23,750
Oklahoma City	4	10	1	288	1,092	92,125
KANSAS						
Barton County	3	23	5	5,704	363	9,935
Stafford County	2	18	4	4,328	173	4,464
Rice County	3	19	3	7,502	1,208	28,701
Russell County	4	20	2	722	1,134	22,513
NEW MEXICO						
Lea County	11	79	10	2,527	1,861	100,120
LA-ARK-TEX						
Rodessa, La-Ark-Tex	1	11	2	295	1,030	72,080
Cotton Valley, La. (deep)	2	17	0	0	89	11,300
Schuler, Ark.	1	28	1	320	94	29,320
Jennings, La.	1	14	1	6	120	25,113
MICHIGAN						
Overisel	3	13	5	1,575	37	6,300
ILLINOIS						
Central Illinois	41	316	51	12,922	1,030	75,447
CALIFORNIA						
Wilmington	5	17	3	4,794	561	93,750
KENTUCKY						
Birk City	1	26	6	1,634	60	4,560

Unitized



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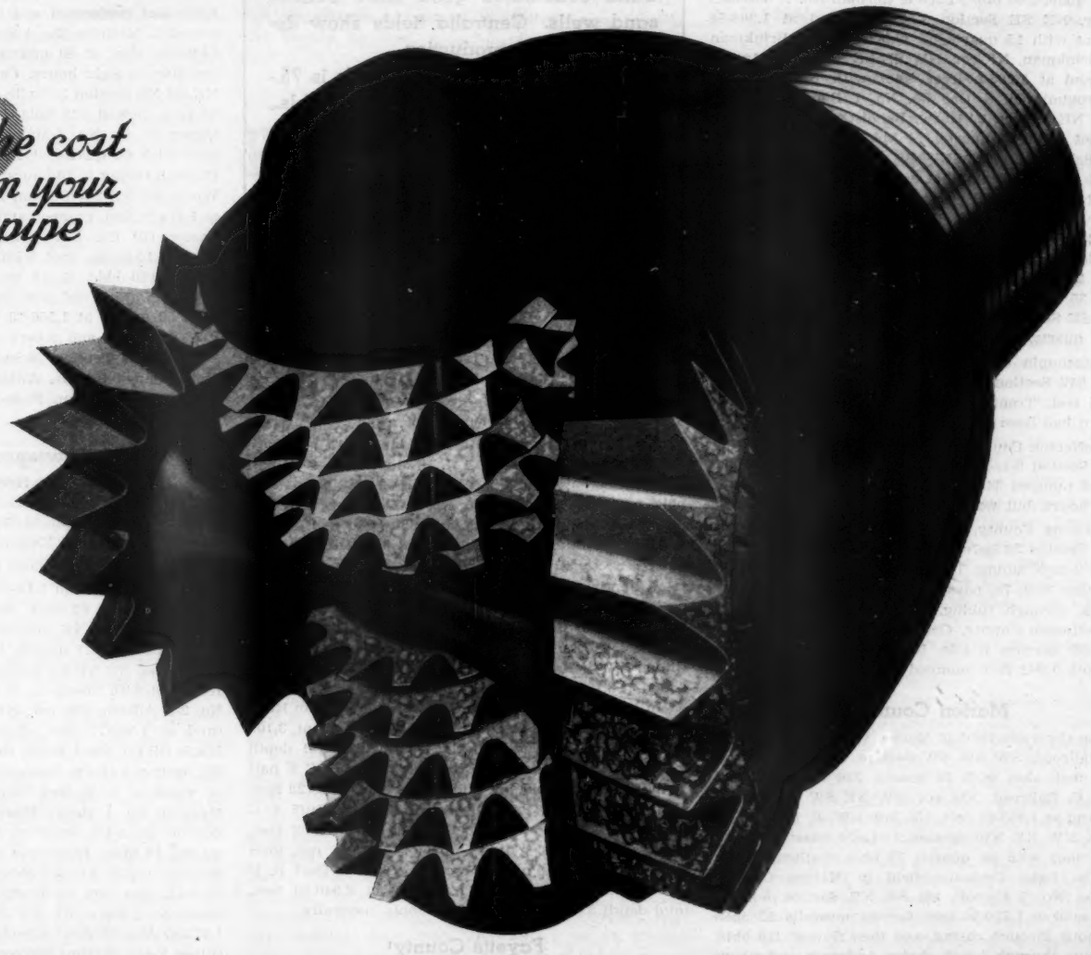

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Illinois and Kentucky

By STAFF CORRESPONDENT

Wayne County M'Closky Pay Yields More Large Producers

MATTOON, Ill., Sept. 26.—Fifty-one oil wells were added to the Illinois fields in the past week. They registered an aggregate initial production of 12,922 bbls. There was a noticeable falling off in the initial production of the Centralia field wells in both Clinton and Marion counties after a heavy drain of several months from the hundreds of wells completed there and permitted to flow to the capacity of the pipe lines to carry off the oil.

H. H. Weinert No. 1-B Morlan and No. 3 Morlan in Big Mound Township in Wayne County are large producers. Weinert completed a 3,800-bbl. well in No. 2 Morlan farm several weeks ago. The initial production of No. 1-B Morlan in Section 33-2s-7e, is reported to be at least as large as that of No. 2 Morlan.

Following are the completions of the past week with their sand records and initial 24-hour production.

Clinton County

In Clinton County, Adams Oil & Gas Co. No. 4 Baker, NW SE SE Section 12-1n-1w, sand at 1,363-85 feet, shot with 10 quarts, 25 bbls. of oil and 7 bbls. of water; Schmuler, Connelly and others No. 1 fee, NE NE SE Section 12-1n-1w, sand at 1,373-92 feet, shot with 10 quarts, 60 bbls.; Pace & German No. 1 Witcher, NW cor. NE SE Section 13-1n-1w, sand at 1,366-84 feet, shot with 15 quarts, 75 bbls.; John F. Brinkman No. 2 Brinkman, NE cor. NW SE SE Section 13-1n-1w, Stein sand at 1,205-24 feet, shot with 10 quarts, 30 bbls.; Iroquois Oil & Gas Co. No. 1 Bierman, S half NE NE NE Section 24-1n-1w, Benoist sand at 1,364-84 feet, shot with 10 quarts, 74 bbls.; Pekros & Nixon No. 1 Babbs, SE cor. SW NW NE Section 24-1n-1w, sand at 1,374-80 feet, shot with 6 quarts, 40 bbls.; O. L. Ray No. 1, NW cor. NE SE Section 24-1n-1w, abandoned at 1,640 feet; Robinson No. 1, NE cor. SE NW NE Section 24-1n-1w, dry and abandoned at 1,395 feet; Victory Oil Co. No. 1 Reinhardt, NE NW NE Section 24-1n-1w, sand at 1,375-86 feet, shot with 8 quarts, 35 bbls.; Shell Petroleum Corp. No. 7 Criley, SW SE SE Section 35-2n-1w, sand at 1,336-67 feet, shot with 21 quarts, 118 bbls.

In Macoupin County, Spence Brothers No. 1 fee, SE SW SW Section 13-8n-9w, was dry and abandoned at 1,755 feet, Trenton lime was topped at 1,648 feet, Devonian had been topped at 1,205 feet.

In Jefferson County, Carter Oil Co. No. 2 Free, NW SE SW Section 3-1s-2e, shot with 15 quarts at 1,959-65 feet, and pumped 54 bbls. of oil and 9 bbls. of water in nine hours, but was not yet a completion.

In Wayne County, Texas Co. No. 2 Koontz, SW NE SW Section 33-2s-7e, pay at 3,316-38 feet, 550 bbls. through 2-inch tubing; Texas Co. No. 1 Lyons, NE SW SW Section 33-2s-7e, pays at intervals at 3,313-42 feet, 406 bbls. through tubing.

In Jefferson County, Carter Oil Co. No. 1 Sanders, SE SE SE Section 4-1s-2e, Bethel sand at 1,928 feet, total depth 1,942 feet, pumped 209 bbls.

Marion County

In the Centralia field in Marion County, Bert Fields No. 4 Railroad, SW SW SW Section 18-1n-1e, sand at 1,343-55 feet, shot with 20 quarts, 236 bbls.; Menhall No. 5 I. C. Railroad, NW cor. SW NE SW Section 18-1n-1e, sand at 1,355-66 feet, 150 bbls.; W. F. Lacy No. 1 Johnson, NW NE NW Section 18-1n-1e, sand at 1,370-78 feet, shot with 10 quarts, 75 bbls. (estimated).

In the Lake Centralia field in Marion County, Texas Co. No. 5 Carroll, SE SE NE Section 6-1n-2e, Benoist sand at 1,720-36 feet, flowed naturally 52 bbls. in one hour through casing, and then flowed 210 bbls. in 24 hours through 1-inch choke; Anderson and others No. 3 English, SE NE SE Section 7-1n-2e, sand at 1,790 feet, total depth 1,825 feet, flowed 492 bbls. through open tubing; Texas Co. No. 1 Craig, SE SW SW Section 9-1n-2e, sand at 1,891 feet, total depth 1,938 feet, pumped 102 bbls. in 16½ hours; Boyce & Welch No. 1 Frederick, SE SE SE Section 36-2n-1e, dry and abandoned at 1,920 feet; Haynes & Thomas Drilling Corp. No. 1 Lee, SE cor. SW cor. SE SW SW Section 28-2n-2e, sand at 1,725 feet, total depth 1,776 feet, 48 bbls. through 23/64-inch choke; Texas Co. No. 2 Corrull, NE SW SE Section 31-2n-2e, Benoist sand at 1,667 feet, total depth 1,701 feet, flowed 89 bbls. through open tubing; same company's No. 6 Corrull, NW SW SE Section 31-2n-2e, sand at 1,704 feet, total depth 1,746 feet, 808 bbls. in 24 hours; Texas Co. No. 1 Dunning, SE NW SE Section 31-2n-2e, sand at 1,653-1,702 feet, 840 bbls. through tubing; Texas Co. No. 2 Reed B, NW NW SE Section 31-2n-2e, Benoist sand at 1,708-54 feet, flowed 262 bbls. through quarter-inch choke; Texas Co. No. 1 Miller, NW NE SE Section 32-2n-2e, sand at 1,735-90 feet, 336 bbls. through quarter-inch choke.

Illinois Fields

HIGHLIGHTS OF THE WEEK: More big wells are reported in Township 2s-7e, Wayne County, producing from McClosky sand. Fayette and Lake Centralia contributed good sized Benoist sand wells. Centralia fields show decline in initial production.

Daily production of new pools is 75,447 bbls. and old pools 12,545 bbls., total 87,992 bbls.

Completed oil wells, 51; new operations including locations, rigs and drilling, 406.

Clay County

In Clay County Wiser Oil Co. No. 2 Daly, NE NW NE Section 4-2n-8e, pay at 3,061-66 feet, pumped and flowed 100 bbls. Pure Oil Co. No. 1 J. E. Moseley B, C W half NE SW Section 4-2n-8e, pay at 2,964-92 feet, flowed 329 bbls. naturally. Pure Oil Co. No. 1 Ida Travis, C E half SE SW Section 4-2n-8e, pay at 2,979-3,030 feet, flowed 453 bbls. naturally. Pure Oil Co. No. 3 Ullom, C W half SW SE Section 16-2n-8e, first oil showing at 3,003 feet, total depth 3,055 feet, acidized with 5,000 gallons, pumped 259 bbls. Carter Oil Co. No. 1 Skelton, C W half NE NW Section 21-2n-8e, pay at 3,011-17 feet, flowed 650 bbls. naturally. Duncan Oil Co. No. 1 Steve Ullom, C W half SW NW Section 22-2n-8e, dry and abandoned at 3,100 feet, McClosky lime at 3,021-48 feet.

In Richland County Pure Oil Co. No. 1 William Rule, C N half SW NE Section 7-2n-9e, abandoned at 3,103 feet, after a 5,000-gallon acid treatment, total depth 3,103 feet. J. V. Wicklund No. 2 McCauley B, C E half W half Section 7-2n-9e, dry and abandoned at 3,123 feet.

In Clay County Pure Oil Co. No. 3 C. D. Duff A, C W half SE NE Section 32-3n-8e, pay at 2,952-62 feet, acidized with 5,000 gallons, flowed 455 bbls. net, total depth 3,025 feet. Pure Oil Co. No. 3 C. O. Duff B, C E half SE SE Section 32-3n-8e, pay at 2,940-59 feet, total depth 3,010 feet, flowed 869 bbls. naturally.

Fayette County

In Fayette County Kingwood Oil Co. No. 1 Smith, NE NE NE Section 13-7n-2e, Stein sand at 1,522-70 feet, 190 bbls. Cummings and others No. 1 Lay, SE cor. NW SW Section 6-7n-3e, Benoist sand topped at 1,547 feet, was dry.. Total depth 1,557 feet, plugged back to 1,484 feet and casing perforated at 1,448-80 feet, initial production 120 bbls. Luttrell & Holleman No. 1 Bald Hill School, in SW SW NW Section 16-7n-3e, was dry down to 1,610 feet and was shut down. D. L. Burtsch No. 1 fee, SW SE SE Section 18-7n-3e, Cypress sand topped at 1,485 feet, total depth 1,532 feet, pumped 160 bbls. Cummings and others No. 3 Burtschi, NW SE SE Section 18-7n-3e, sand at 1,590-96 feet, 125 bbls. Shell Petroleum Corp. No. 1 Harper, SE SE NE Section 18-7n-3e, shot with 21 quarts at 1,530-36 feet, pumped 124 bbls. Thayer Drilling Co. No. 3 Morrison, SE NW NE Section 19-7n-3e, Weiler sand at 1,479-1,512 feet, 150 bbls. Mabee Drilling Co. No. 1 Bank, NE NE SE Section 30-7n-3e, Weiler sand at 1,537-62 feet, shot with 50 quarts, 72 bbls. Phillips No. 1 Perryman, NE NE NW Section 3-8n-1e, topped McClosky lime at 1,770 feet and was abandoned as dry at 1,822 feet. Carter Oil Co. No. 4 J. G. Main, SE SW SW Section 14-8n-3e, shot with 20 quarts at 1,591-95 feet, flowed 191 bbls. through tubing. Carter No. 5 Main, NE SW SW Section 14-8n-3e, Weiler sand at 1,462-1,508 feet and Bethel sand at 1,581-92 feet, pumped 156 bbls. W. C. McBride, Inc., No. 3 Stokes, NE SW NE Section 14-8n-3e, casing at 1,499-1,519 feet perforated and this well swabbed 100 bbls. initially. McBride No. 4 Stokes A, SE NW NE Section 14-8n-3e, shot at 80 quarts at 1,493-1,510 feet, flowed 386 bbls. in eight hours. Carter Oil Co. No. 2 Bartemus, NE SE NE Section 15-8n-3e, shot with 60 quarts at 1,545-58 feet, flowed 227 bbls. in 12 hours through tubing. Carter Oil Co. No. 3 Main, NE SE SE Section 15-8n-3e, shot with 60 quarts at 1,547-63 feet, flowed 178 bbls. through tubing in 10 hours. Carter Oil Co. No. 3 Leander Wood, SE NE SW Section 15-8n-3e, shot with 40 quarts at 1,478-91 feet, pumped and flowed 93 bbls. in 18 hours. Carter Oil Co. No. 4 Leander Wood, NE SE SW Section 15-8n-3e, shot with 80 quarts at 1,468-86 feet, flowed 186 bbls. in 18 hours through tubing. Carter Oil Co. No. 5 Wood, SW SE NW Section 15-8n-3e, shot with 50 quarts at 1,558-76 feet, 540 bbls. through tubing. Apperson and others No. 1 Botterbusch, NW cor. SW SW SW Section 29-8n-3e, Bethel sand at 1,567-71 feet, pumped 40 bbls. Allied Oil Corp. No. 1 Carter, SE cor. NE SW Section 31-8n-3e, shot with 15 quarts at 1,521-36 feet, 40 bbls.

Lawrence County

In Lawrence County Herbst and others No. 1 Houghton, C SE SE Section 12-4n-11w, Buchanan sand at 1,089-1,100 feet, total depth, 4,057,000 feet of gas which will be purchased by the Kentucky Natural Gas Co.

Clinton County: Adams Oil & Gas Co. No. 3 Felton, NW NW NW Section 1-1n-1w, pay at 1,341-54 feet, shot with 15 quarts, 62 bbls. Shell Petroleum Corp. No. 6 Criley, NW NE NE Section 2-1n-1w, sand at 1,332-68 feet, shot with 21 quarts, 163 bbls. Lucas and others No. 1 Ross, NE NE SE Section 12-1n-1w, sand at 1,372-78 feet, shot with 10 quarts, 85 bbls. Shell Petroleum Corp. No. 2-B Allison, SW cor. NW NE NE Section 12-1n-1w, sand at 1,362-77 feet, shot with 10 quarts, 78 bbls. Magic Oil Co. No. 1 Home Building & Loan, SW cor. NE NE Section 4-1n-1w, Benoist sand at 1,397 feet, hole full of water at 1,428 feet, total depth, abandoned. T. E. McArdle No. 1 Henry Bierman, SW cor. NW NE NE Section 24-1n-1w, sand at 1,370-86 feet, shot with 10 quarts, 18 bbls. Rockwood and others No. 1 Bradshaw-Warren, C SW NE NE Section 24-1n-1w, sand at 1,372-82 feet, shot with 10 quarts, 75 bbls. estimated. W. B. Smith No. 2 Shaw, NE NW NE Section 24-1n-1w, sand at 1,371-82 feet, shot with 8 quarts, 185 bbls. Snowden & Oliver No. 1 Mifflin, SW cor. SE NE NE Section 24-1n-1w, sand at 1,375-83 feet, shot with 5 quarts, 85 bbls.

Blosser and others No. 1 Carson, SE SW NE Section 34-2n-1w, Benoist sand at 1,392 feet, water at 1,395-1,410

feet, total depth, abandoned. Adams Oil & Gas Co. No. 3 Copple, NE NW SE Section 35-2n-1w, sand at 1,356-71 feet, shot with 10 quarts, 103 bbls. Adams Oil & Gas Co. No. 4 Copple, SE SW SE Section 35-2n-1w, sand at 1,340-98 feet, shot with 15 quarts, 100 bbls., estimated. W. C. McBride, Inc., No. 5 Carson, SE NE SE Section 35-2n-1w, sand at 1,345-68 feet, shot with 20 quarts, 190 bbls. estimated. W. C. McBride, Inc., No. 4 Carson, NW NE SE Section 35-2n-1w, Stein sand at 1,201-22½ feet, shot with 19 quarts, 125 bbls. W. C. McBride, Inc., No. 6 Carson, NE NE SE Section 35-2n-1w, Benoist sand at 1,349-64 feet, shot with 10 quarts, 179 bbls.

Joe Young No. 7 Heifer, SE cor. NE SW Section 6-1n-11w, Wabash County, hole full of water at 1,062 feet, total depth, abandoned.

In Marion County, Kirk D. Holland No. 2 Cemetery Lot, NE NW SW Section 28-4n-1e, Benoist sand at 1,437-49 feet, shot with 5 quarts, 12 bbls. of oil and some water; Adams Oil & Gas Co. No. 2 Cox, SW NE SE Section 29-4n-1e, sand at 1,413-43 feet, shot with 20 quarts, pumped 60 bbls; Davis and others No. 1 Tubbs, NE cor. SW SW NW Section 7-1n-1e, was dry and abandoned at 1,475 feet, Benoist sand at 1,382-1,412 feet had only a showing of oil; Ray Thorne No. 1 Scott, NW SW NW Section 7-1n-1e, was junked and abandoned at 1,096 feet; Illinois-Iowa Power & Light Co. No. 2 fee, SE NW SW Section 18-1n-1e, sand at 1,345-69 feet, shot with 10 quarts, 210 bbls.; Ed Lang No. 1 Dr. Plassman, SW SW NE Section 18-1n-1e, Benoist sand at 1,366-78 feet, shot, 110 bbls.; Lewis C. Sinimel No. 1 Max Prill, SE cor. NE SW NW Section 18-1n-1e, sand at 1,377-82 feet, 75 bbls.; Ostrom No. 1 Petrea, NE cor. SW NE SW Section 19-1n-1e, sand at 1,366-84 feet, shot with 15 quarts, 125 bbls.

In Montgomery County, Meyers and others No. 1 Klekamp, NE cor. SE SW SE Section 29-8n-5w, 1,500,000-foot gas well at 554 feet, plugged back depth, Stein sand was topped at 555 feet, and Benoist at 612 feet with a small showing of oil, McClosky lime at 778-81 feet, total depth 910 feet.

In Edgar County, Stipes and others No. 1 Wilhart, SE NW SE Section 18-12n-13w, was a hole full of water at 600 feet and was reported abandoned.

Wildcat Completions

Frontier Oil & Gas Co. No. 1 Fyke School, NW NE SW Section 17-1n-2e, an eastern outpost to the Lake Centralia field in Marion County, was dry and abandoned at 1,941 feet, the first well to limit the spread of the field in any direction. Benoist sand at 1,933-41 feet was dry and salty.

Weinert No. 1 Foster, near NW cor. SE SE Section 7-1n-2e, extended the Lake Centralia field by coming in with a production of 427 bbls. of oil in 24 hours through three-quarters inch choke, producing from Benoist sand at 1,790-1,824 feet, total depth 1,828 feet. The discovery well in this field. Texas Co. No. 1 Tate, Section 5-1n-2e, produced 732 bbls. initially from the same sand at 1,752-1,810 feet.

Wanner and others No. 1 Young School, NE NW SE Section 20-2n-2e, a northern Lake Centralia outpost on a 1-acre tract, flowed 648 bbls. in 24 hours from Benoist sand at 1,725-26 feet, total depth, or in the top of the sand. It flowed through a 1-inch choke. Two other East Centralia wildcats were also successful. Haynes & Thomas Drilling Co. No. 1 Lee, SE SW SW Section 28-2n-2e, was completed after it had flowed 480 bbls. of oil in 24 hours through 23/64-inch choke, and the Conrey-Baldwin and others No. 1 West Nation School, in the extreme SW cor. Section 33-2n-2e, which had Benoist sand at 1,838 feet, total depth 1,860 feet, flowed 350 bbls. in 24 hours through 2-inch tubing half open, was completed.

Sheppard and others test, No. 1 C. Green, SW NE SW Section 30-2n-2e, Marion County, is shut down at 1,911 feet, original total depth 1,946 feet, having shown salt water and no oil. This test was shot with 5 quarts at 1,920-24 feet.

Pyramid Petroleum Co. No. 1 Roddy, SE SE SW Section 20-2n-3e, Marion County, was dry and abandoned at 2,207 feet.

Duncan Oil Co. No. 1 Ullom, C W half SW NE Section 22-2n-8e, in Clay County, had McClosky lime at 3,021-22 feet, total depth 3,200 feet, and it was dry, and the hole abandoned.

Pure Oil Co.'s wildcat in northeastern Marion County, No. 1 Wakefield, C W half NW NE Section 26-4n-4e, was engaged in a fishing job, but its fate as a test was very much in question. It was acidized in McClosky lime topped at 2,926 feet, total depth 3,003 feet, but the lime would not take all the acid. It was swabbed eight hours and did recover the load.

The Rosenthal No. 1 Washburn, NE SE NW Section 30-6n-3e, which extended the Louden field in Fayette County, was completed. It pumped 188 bbls. in 24 hours from Weiler sand at 1,599-1,622 feet.

In Montgomery County, Baker & Martin No. 1 Satterlee, NW SW SW SE Section 3-8n-5w, was reported dry and abandoned at 768 feet. In the same county, Myers and others No. 1 Klekamp, SW SE Section 29-8n-5w, is a 1,500,000-foot gas well at 554-63 feet, completed.

In Shelby County, Kingwood Oil Co. No. 1 Staley, SE NE NE Section 17-12-4e, was dry and abandoned at 2,072 feet. Ste. Genevieve lime top was found at 1,927 feet, Rosecliaire at 1,980 feet, and Fredonia at 1,986 feet.

In Jefferson County, Adams Oil & Gas Co. No. 1 Old Ben Coal Co., SW SW NE Section 19-5s-2e, was dry and abandoned at 3,102 feet.

In Perry County, T. T. Eason No. 1 Perfection Coal Co., NW SE NE Section 17-6s-1w, was dry and abandoned at 1,823 feet.

Wildcat Drilling

Marion County: Gray & Blalock No. 1 Doctor Welch, E half NE NW Section 2-1n-1e, total depth 900 feet, will drill ahead with cable tools; Thompson Drilling Co. No. 1 Wright, C NE SE NE Section 8-1n-1e, shut down for orders at 2,014 feet; Boyce and others No. 1 Foster, C NW NW SE Section 10-2n-1e, total depth 1,340 feet, rigging up rotary; Oil Royalties No. 1 Suggs-Meeker, C W half NW NW Section 11-2n-1e, total depth 1,300 feet, underreaming 8-inch pipe; Jay Copps No. 1 Wesner, SW SW NW Section 24-2n-1e, rigging up machine; Coyer No. 1 Mulvaney, SE NE SE Section 6-2n-4e, total depth 1,210 feet, moving in rotary; Hansky No. 1 Yoos, NW NE NE Section 6-1n-1e, running 10-inch pipe; Anna Belle Oil Co. No. 1 Adams, NE SW NW Section 3-1n-1e, shut down for repairs at 1,200 feet; Superior Oil Co. of California No. 1 Luttrell, SW SE SE Section 4-1n-2e, drilling at 1,700 feet.

Clinton County: Watkins & Wright No. 1 Wise, 75 feet from north and 600 feet from west lines SE quarter Section 24-1n-3w, total depth 908 feet, underreaming at 815 feet; Farrelly and others No. 1 Bergman, NW SW NW Section 30-1n-3w, shut down at 723 feet; Sappington and others No. 1 Hilgeman, SE NE NW Section 22-3n-3w, hole full of water, shut down at 1,060 feet; M. & K. Oil Co. No. 1 Keaner, NE NW NE Section 10-3n-2w, drilling at 1,263 feet.

Fayette County: C. C. Cole and others No. 1 Grider, NE SW SW Section 12-6n-3e, drilling at 610 feet; Whisenant and others No. 1 Rexwinkle, near N line SE NE Section 20-6n-3e, drilling at 1,614 feet; W. M. Angle No. 1 Brubaker, SW SW NW Section 21-6n-3e, location; Ruwald & Johnson No. 1, 320 feet from N and 1,305 feet from E lines of NE quarter Section 28-7n-3e, total depth 100 feet, waiting for rotary; Hurricane Creek No. 1 Eddie Eckard, C NW NE Section 15-6n-1w, drilling at 70 feet; Putnam and others No. 1 Farmer, C SE SE Section 35-6n-1w, drilling at 180 feet; Rockwood No. 1 Coper, SW SW NE Section 9-8n-1e, drilling at 905 feet; Frank Bemer and others No. 1 Frank Wald, NE SE NE Section 29-9n-1e, pits dug.

Christian County: Swords & McDougall No. 1 B. Warren, NW SE SE Section 23-11n-1e, total depth 380 feet, straight reaming.

St. Clair County: Neil No. 1 Pfeffer, 900 feet from S and 330 feet from E lines of NE quarter Section 30-2n-6w, Mississippi lime 826 feet, drilling at 954 feet.

McDonough County: O. H. Hammer No. 1 Jones, C NW Section 22-7n-3w, of fourth p.m., shut down for repairs.

Richland County: Lake & Allen No. 1 Hazel, C NE NW Section 22-2n-9e, drilling at 1,863 feet.

Lawrence County: Hanke and others No. 1 Carrie, C SE SE Section 21-2n-13w, machine in.

Southern Wildcats

Washington County: Morris and others No. 1 Henry Beguiln, SW SW NW Section 12-1s-1e, shut down at 75 feet; Hull, Stoffer & Boughter No. 1 Williams, SE SW SE Section 7-2s-3w, drilling at 1,450 feet; Bitterman No. 1 Bonk, C SE NE SW Section 16-3s-2w, drilling at 1,381 feet; Adventure Oil Co. No. 1 Kcychi, SE SE NW Section 30-3s-1w, Cypress top 1,227 feet, drilling at 1,247 feet.

Jefferson County: Sam Jennings and others No. 1 Patton, NW NE SW Section 1-1s-1e, shut down at 1,263 feet; Doctor Moore No. 1 Moore, SE NE NW Section 16-3s-5e, drilling at 1,430 feet; Benedum-Trees,

(Continued on Page 93)

Birk City Has Six New Wells But Few New Operations

OWENSBORO, Ky., Sept. 26.—A busy week in the Birk City pool developed six completions with an initial production aggregating 1,924 bbls.

In the Birk City field in Daviess County, A. C. R. Oil Co. No. 1, Duncan lot, had McClosky lime at 1,728-70 feet, total depth. The well flowed 400 bbls. in 24 hours, and was completed. Carter Oil Co. No. 2 R. M. Hagan, south tract, initial production estimated at 500 bbls. after an acid treatment in McClosky lime at 1,839½-48 feet, total depth 1,885 feet, but plugged back to 1,860 feet and acidized with 4,000 gallons. Aetna Oil Service Corp. No. 2 G. M. Morrison, found McClosky lime at 1,839-43½ feet, total depth 1,887 feet, and flowed 400 bbls. naturally in 24 hours.

On the Henderson County side of the field, Carter Oil Co. No. 3 Dempwolf, west tract, was given 4,000 gallons of acid in McClosky lime at 1,854-69 feet and flowed 224 bbls. in 23 hours. Imperial Oil & Gas Co. and others No. 1 Bertie Gibson Estate, is a 200-bbl. well from 15 feet of McClosky lime, total depth 2,085 feet. Sun Oil Co. and Kentucky Natural Gas Co. No. 1 Waverly Staples Estate started at 200 bbls. a day from McClosky at 2,063½-71 feet, total depth 2,078 feet.

Other completions in Western Kentucky, together with new work started, are listed below:

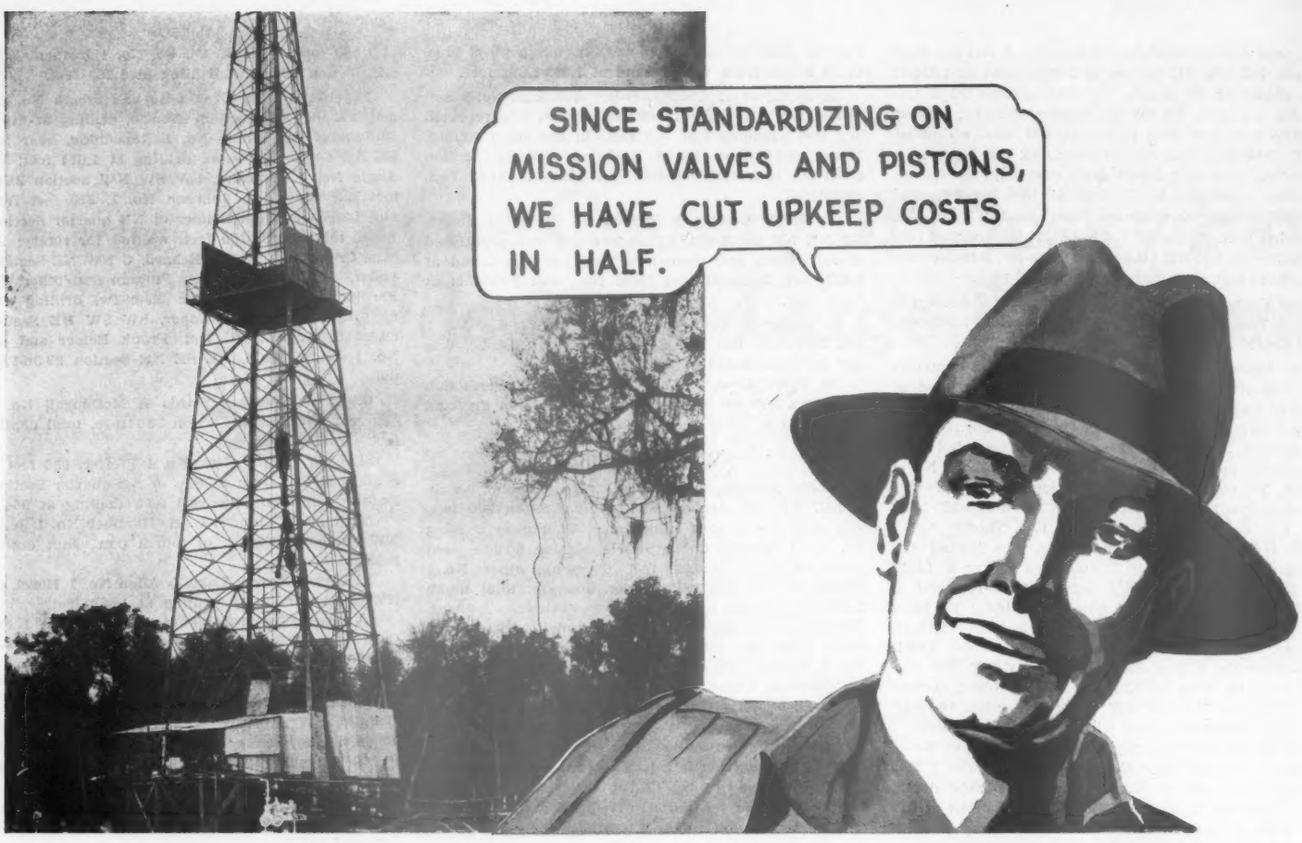
Butler County, Mount Zion School district: Dr. Henry Smith and others No. 2 Jess Arnold, dry hole, 174 feet; Porter Evans and others No. 1 A. C. Foster, location; J. F. Breslin and others No. 1 Porter Harper, location; Sam Gish and others No. 1 Kirtley Heirs, drilling at 210 feet. South Hill district: Interstate Oil & Gas Co. No. 1 A. Bradley, dry hole, 960 feet. Silver City district: Porter Evans and others No. 2 A. R. Brown, dry hole, 620 feet; Snowden & McSweeney and others No. 1 O. L. Grubb, drilling at 151 feet; J. C. Miller, trustee, No. 1 Martha A. Hawes, spudding in. Huntsville district: Porter Evans and others No. 1 Joe Heck, spudding in.

Daviess County, Birk City district: A. C. R. Oil Co. No. 1 R. L. Logsdon, moving in. Hewlett's Store district: General Drilling Co. No. 3 T. Church Estate, 15 bbls. per day, Jackson sand at 967-82 feet, and Barlow sand at 1,038-59 feet, total depth 1,068 feet; W. E. Hupp and others No. 3 Randall Hunter, dry hole, through lower Jett sand. Livia district: Claypool, Chenault and Farmer No. 1 Jesse Niceley, location. Utica district: Farmer & Chenault No. 2 Martin Weaver, 50-bbl. well in Jones sand at 1,181-1,204 feet.

Hancock County, Easton district: R. M. Cooper and others No. 8 Mrs. Jane Lane, 21-bbl. well from second Jett sand at 284-302 feet.

Henderson County, Birk City district: W. E. Hupp and others No. 3 O. L. Boswell, east tract, cored Cunningham sand and set casing, good saturation, total depth 1,757 feet. Carter Oil Co. No. 4 Dempwolf, west tract, moving in.

Ohio County, Adaburg district: Nollem Oil & Gas Co. No. 10 Vincent Crowe, drilling at 150 feet; Leeper Oil Co. No. 3 Mary E. Froman, rigging up. Oklahoma district: A. Teller, trustee, No. 5 Archie Dickens, 40-bbl. well, Jett sand 579-90 feet; Petroleum Co. No. 1 M. Westerfield, dry hole through Jett sand, total depth 710 feet. Taffy district: Western Kentucky Petroleum Corp. No. 41 Mary Elmore, spudding in. Heflin district: Boling & Callas No. 6 Mrs. J. Simmerman, drilling at 600 feet. Fordsville district: W. E. Hupp and others No. 2 John H. Smith, dry hole through Bethel sand.



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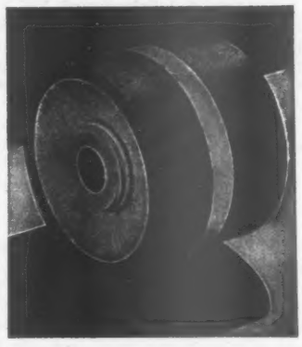

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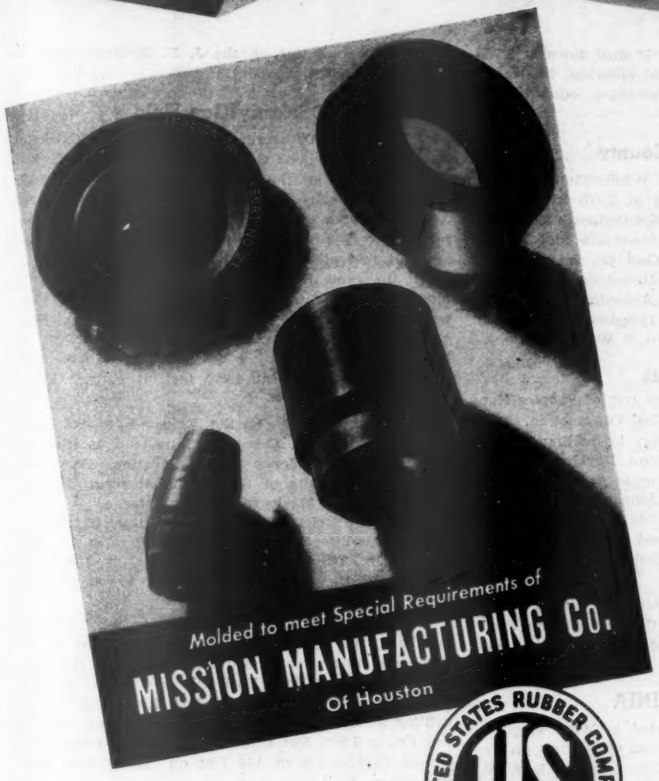

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Eastern Field Report

By STAFF CORRESPONDENT

Yield Fair Sized Gas Wells in Oriskany Sand in W. Va.

PITTSBURGH, Pa., Sept. 26.—A deep test scheduled for the Oriskany sand is starting in Mercer County, Pennsylvania, where the Carnegie Natural Gas Co. has a rig standing on the A. S. McCullough farm in Jefferson Township, on the Shenango Quadrangle. It is located in Latitude 41 degrees, 15 minutes, 26 seconds, Longitude 80 degrees, 20 minutes, 54 seconds. It is 1.15 miles south, 71 degree, 30 minutes east, of the McCullough School.

None of the deep tests now drilling in the lower Eastern fields reached a conclusion during the week. In Fayette County, Pennsylvania, the test of the L. J. Houze Convex Glass Co. on the Paul Dunham farm on Chestnut Ridge in Springhill Township, is proving an enigma. It reached 7,005 feet, or minus 4,803 feet subsea, without reaching the Onondaga, whereas in the discovery well, No. 1 Heyn, over 9 miles northwest on this structure, the Onondaga was topped at 4,259 feet subsea. There was a lime section in the Dunham test at 6,628-6,715 feet which at first was believed to be the Onondaga, but it was followed by dark shale which has now extended 290 feet, and appears to be repeating the shales above that lime section.

Twenty-two operations were completed in the lower Eastern fields during the past week of which 2 were dry, 13 gas wells, and 7 oil wells with a daily initial of 97 bbls. There were several new Oriskany gas wells in the Kanawha County, West Virginia, field.

SOUTHEAST OHIO

In Athens County, C. W. Nuzum completed a test on the Lena and Kate Niggemyer farm at Carthage Gap in Section 35, Carthage Township, in the Salt sand at a depth of 1,055 feet and it gauges 1,000,000 feet a day. In Dover Township, Section 21, Kachelmacher & Tate drilled No. 4 New York Coal Co. through Berea sand to 1,042 feet and there was only a light showing of oil and it will be plugged.

In Lodi Township, Athens County, Section 5, Williams Brothers completed a gas well on the William C. Snodgrass farm in the second Berea sand at 1,785 feet and it is good for 250,000 feet a day. In the same section, A. D. Townsend completed a gasser on the Hawk heirs farm in the same formation and it is good for 500,000 feet a day.

In Knox County, H. E. Perkins test on the John J. Blubaugh farm in the SW quarter Section 19, Jefferson Township, was completed in Clinton sand, total depth 3,150 feet. It had a gauge of only 60,000 feet of gas a day.

In Licking County, J. P. Goodman and others completed No. 5 Thomas S. Moran in Section 13, Fallsbury Township, in Clinton sand at 3,024 feet. It produced 40 bbls. the first day after a shot.

In Perry County, N. L. Altier & Sons completed No. 13 Monahan, in the NW quarter Section 33, Pleasant Township, in Berea sand at 1,047 feet. It produced 4 bbls. the first day after a shot.

SOUTHWEST PENNSYLVANIA

Union Gasoline & Oil Corp. No. 2 G. L. Craft, in Morris Township, Washington County, Pennsylvania, at a total depth of 2,955 feet, with the fifth sand topped at 2,927 feet, is a 10-bbl. well at 2,941-50 feet, along with some gas.

In Center Township, Greene County, Carnegie Natural Gas Co. made a location for No. 4 J. H. Orndoff in the northeast corner of the tract. In Morris Township, R. E. Hoskinson and others are fishing at 2,100 feet on the H. W. Ealy-C. C. Conklin lease. In Richill Township, W. L. Walters is drilling at 1,780 feet on the Ellsworth Burnfield farm with Big Injun sand topped at 1,769 feet and a show of gas at 1,777 feet.

In Washington Township, Greene County, Equitable Gas Co. topped the Fifty Foot sand at 2,747 feet on the John Huffman farm and is shut down at 2,765 feet with about 68,000 feet of gas showing. In Greene Township, H. D. Freeland is cleaning out to start deepening No. 1 I. T. Moser.

Washington County

In Fallowfield Township, Washington County, Naomi Oil & Gas Co. is drilling at 2,470 feet on the James M. Williams farm. In Nottingham Township, Beedle, Clark and others are down 378 feet in the second test on the Pittsburgh Coal Co. lease.

In Buffalo Township, R. M. Duden and others are drilling at 1,350 feet on the Antonius Provanzano farm. In Hanover Township, Breadon and Herron were drilling at 1,350 feet in No. 3 W. N. Bell.

Deep Tests

On Chestnut Ridge, the rotary test of Peoples Natural Gas Co. on the Piedmont Coal Co. tract in south Union Township, Fayette County, is drilling at 720 feet. In this township, New Penn Development Co. and William E. Snee are drilling at 680 feet in the Indian Creek Coal Co.-William Johnson warrant test. In North Union Township, on this structure, Wasson & Co. are still fishing in the test on the J. H. Sorg farm with two strings in the hole after a depth of 6,215 feet had been reached.

In Beaver County, John T. Galey and others drilled by a part of the lost tools in the test on the Eliza Allen heirs farm in South Beaver Township, and are still fishing for the tools.

WEST VIRGINIA

Four producers were completed in West Virginia. In Cabell County, G. L. Meabon and others test on the Wilson-Walton lease in Guyandotte district, is a 20-bbl. well in the Big Lime at 1,417 feet, which had been acidized.

In Boone County, the Pure Oil Co. completed No. 290 on the Williams Coal Co. tract in Sherman district at 3,062 feet, Berea sand, and it is showing for 8 bbls. a day.

In Pleasants County, the Powell Oil Co. test on the G. S. M. Powell farm in Jefferson district, started at 10 bbls. per day from Squaw sand at 1,849 feet.

In Wood County, B. C. Strain completed No. 3 Strain in Union district in Berea sand at 2,356 feet and it is showing for 5 bbls. a day.

Gas Wells

In Cabell County, W. C. Kingery and others deepened the test on the Augusta Beckett farm in McComas district starting at 1,345 feet, new total depth 3,039 feet; Brown shale lay at 2,717-2,980 feet, with 94,000 feet a day in 24 hours after the shot.

In Calhoun County, Hope Natural Gas Co. completed No. 7816, on the Allen Hardman land, in Lee district, at 1,577 feet. The Second Salt sand was at 1,559 feet with 425,000 feet of gas before a shot at 1,563-77 feet. In Sherman district, McCall Drilling Co. completed the R. W. Bennett test at 2,055 feet with the Big Injun at 1,950-2,050 feet and 144,500 feet of gas before shot at 2,000-20 feet.

In Gilmer County, the Hope Natural Gas Co. completed No. 7807, on the G. C. and L. C. Weaver land, in DeKalb district, as a gas well in Big Injun sand at 1,992-2,071 feet. The gas gauged 26,500 feet a day without a shot at 2,053-57 feet.

In Ritchie County, Clem S. Morris completed a small gasser on the W. B. Cunningham farm in Murphy district at 1,822 feet, Injun sand, and it gauged 37,320 feet a day.

In Roane County, Clendenin Gas Co. on the E. E. Fields farm in Harper district, has a gasser in Salt sand at 1,371-1,420 feet. It gauged 250,000 feet of gas at 1,390-1,410 feet. In Geary district, H. M. Boggs drilled a second test on the J. B. McQuain farm to 1,253 feet and it was dry.

Oriskany Gas Field

Four gas wells were completed in the Oriskany gas field in Kanawha County. In Poca district, United Carbon Co. test on the I. C. Miller farm, at 5,015 feet, with the Oriskany sand topped at 4,990 feet, gauged 3,000,000 feet a day. Here, United Fuel Gas Co. completed No. 4803 on the Lillie Dawson and others lease at 5,024 feet and it gauged 6,981,000 feet a day.

In the same district, Columbian Carbon Co. completed a well on the Lena Castro farm at 5,092 feet with a final gauge of 12,530,000 feet a day. West Virginia Gas Corp. on the Fisher-Newhouse farm in Poca district completed a gasser at 4,955 feet, with the Oriskany topped at 4,939 feet. It gauged 4,358,000 feet a day.

In Jackson County, on the Jackson-Kanawha County line, Godfrey L. Cabot, Inc., made a location on the Walker and Jones lease, elevation 851.6 feet, found in the limits of Latitude 38 degrees, 35 minutes; Longitude 81 degrees, 30 minutes.

In Poca district, Mullins Gas Co. topped Oriskany sand at 4,901 feet on the W. H. Odell farm and was drilling in. This company is drilling at 4,300 feet in the Earl K. Johnson test, and at 3,875 feet in the Manfred Fisher test.

The Columbian Carbon Co. has reached 5,075 feet on the L. P. Rollins farm; 3,745 feet in the W. H. Odell and others test; 1,650 feet on the W. H. Miller and others land. Poca Fork Oil & Gas Co. is down 4,650 feet on the Levi Combs test. Lima Gas Co. was drilling at 2,900 feet on the A. T. Mairs land. Spartan Gas Co. at 1,835 feet in the L. and A. E. Fisher test; United Carbon Co. at 444 feet on the William Moss and others land.

The United Fuel Gas Co. has nine wells drilling on the farms and at the depths named: T. F. Good and others at 4,915 feet; O. V. Milam at 4,952 feet; W. H. Odell and others at 4,950 feet; Floto Johnson at 4,953 feet; J. W. Harding and others at 4,565 feet; Odell and Glass at 2,604 feet; Milam and Odell at 2,000 feet; Joseph W. Legg at 1,779 feet; and J. H. Bumgardner at 277 feet.

In Elk district, Columbian Carbon Co. is down 4,750 feet in the W. B. Fogarty test; 3,162 feet in the Bratton Hanna test; 1,557 feet in No. 2 Ida Hughart. United Carbon Co. has reached 1,260 feet on the Van Canterbury land, and at 1,705 feet on the J. H. Prillerman land in Poca district.

New Work

In Cabell County, locations have been made by W. A. Waggoner on the H. C. Childers farm in McComas district, elevation 912 feet, and in the same district, by Taylor Gas Co. on the R. V. Holton farm, elevation 967 feet. In Calhoun County, Gunn, Gainer & Gunn on the Stella Frame and others lease in Sherman district, elevation 1,020 feet; McCall Drilling Co. on the Robert Hathaway and J. A. Arnett lease, elevation 781 feet; Verle Stewart on the G. B. Francis farm, Sherman district, elevation 983 feet; in Gilmer County, M. V. and M. J. Moran on the J. S. Taylor farm in Glenville district, elevation 725 feet.

In Harrison County, Carnegie Natural Gas will deepen the second test on the B. F. Heldreth farm in Eagle district. In Doddridge County, James Prunty is rigging up on the R. L. Boyce farm in Central district.

In Lewis County, Goodwin and Watson are drilling at 1,790 feet in the C. and G. Burkhammer test in Court House district, and McCall Drilling Co. is at 960 feet in the Danley J. Davis test in Freemans Creek district.

(Continued on Page 104)

West, Central and Panhandle Texas

Large Well in Waddell Pool; Extend Denver Area 2 Miles

By D. H. STORMONT

FORT WORTH, Tex., Sept. 26.—The West Texas area showed a general increase in activity over the past week with both field completions and general drilling activity showing an up-hill trend. The Wasson-Denver field of Yoakum and Gaines counties and the Slaughter field of Hockley County centered the attention in the north basin area as important extensions to both fields showed favorable developments.

A 2-mile northwest extension to the Denver area of southern Yoakum County was assured when Magnolia Petroleum Co. No. 1 Lynn, Section 770, swabbed 11 bbls. of oil per hour through 2-inch tubing after initial treatment with 3,000 gallons of acid. The well previously had been shot with 110 quarts from 5,123 feet to 5,165 feet, total depth, and had swabbed 100 bbls. of oil in 24 hours. About 4 miles west of the Denver area, and in Shell Petroleum Corp. four-well Roberts pool, the company's No. 4 Dora Roberts, Section 793, quarter-mile south and west extension to the area, flowed 326 bbls. of oil on 24 hour Railroad Commission gauge. Well is bottomed at 5,164 feet and was treated with 10,000 gallons of acid.

Two new tests were staked in the Wasson-Denver pool over the past week; one for a mile west outpost to the north extension area in northwestern Gaines County and the other for a link well in the area between the two adjoining pools. M.B.K. Drilling Co. located its No. 1-B Wasson in Section 51, Block AX, P.S.L. Survey, about a mile west of the Continental Oil Co. No. 1-50 Wasson, most northern producer in the north extension area, which was completed the past week for an initial of 914 bbls. of oil daily, naturally. In the link area between the two pools, Humble Oil & Refining Co. staked No. 3 Wooten, Section 865, Block D, about a mile and a half east of production on the south end of the Denver area proper.

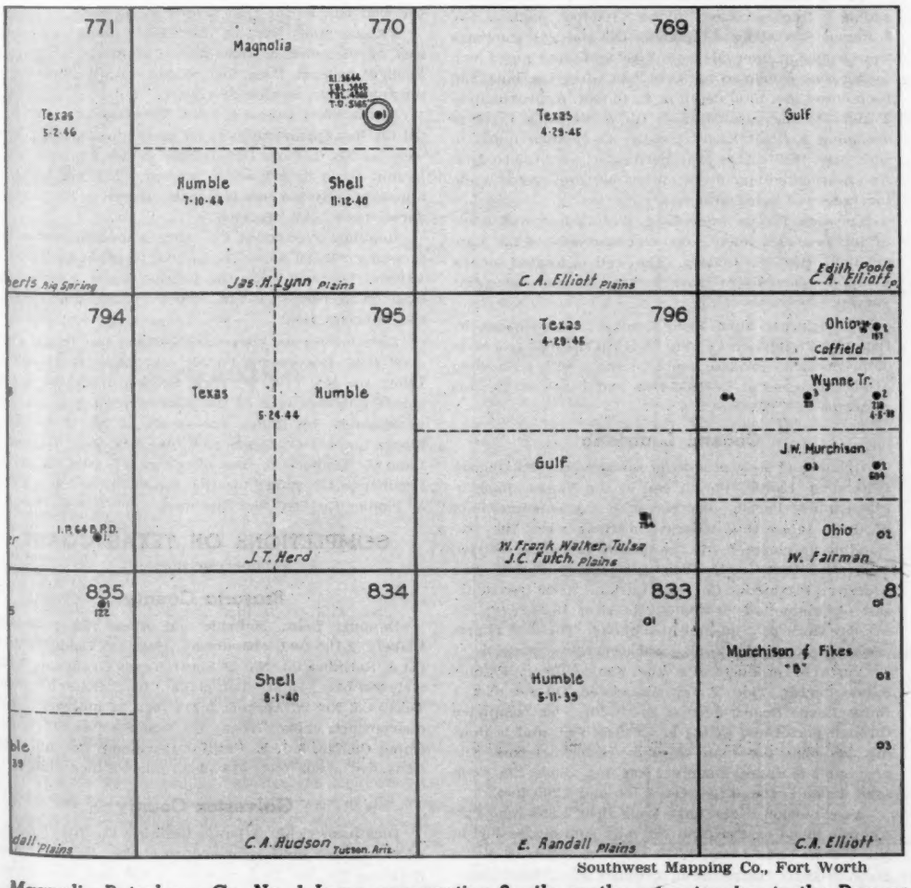
A possible outlet for the Slaughter pool of Hockley County was indicated when plans were started for a topping plant at Levelland, approximately 10 miles to the northeast of the sector. The planned plant will have a capacity of about 2,500 bbls. of crude daily. The pool has been without an outlet since its discovery early last year by Texas Co. There are now eight producers in the pool with other tests in the process of completion. One of these, Gulf Oil Corp. No. 2 Mallett Lands, about 3 miles northeast of production, swabbed 190 bbls. of oil in 24 hours. It is bottomed at a plugged-back depth of 5,070 feet and has been shot and acidized. Two miles to the northwest of the discovery well in the pool, Texas Co. No. 1-B Mallett, Labor 1, League 52, Scurry C.S.L. Survey, was drilling below 3,870 feet.

Central and South Basin

Location for a quarter-mile west outpost to Rogers & Rogers No. 1 O. B. Holt, Jr., 225-bbl. discovery well in southern Andrews County, has been made by Broderick & Calvert and G. P. Livermore. It will be the operators' No. 1 O. B. Holt, Jr., and is located in Section 1, Block 43, T.&P. Survey.

The Railroad Commission of Texas ordered a hearing in Austin for October 10 for determining whether special rules are necessary for the Emma Cowden oil field of Andrews County. The area centers around University Block 10, T.&P. Survey.

The south edge of the Harper pool of Ector County received a new location when J. E. Mabee staked a test on his recently acquired acreage including the north half of Section 34, Block 44, T.&P. Survey. This was the second acreage deal for the Oklahoma operator during the past week, he having acquired the west half and the southeast quarter of Section 741, southwest of the Bennett pool in Yoakum County.



Southwest Mapping Co., Fort Worth

Magnolia Petroleum Co. No. 1 Lynn, prospective 2-mile northwest extension to the Denver area of Yoakum County. The well has swabbed 100 bbls. of oil in 24 hours on initial tests

WEST CENTRAL TEXAS

In West Central Texas, tubing was being run for completion at Humble Oil & Refining Co. No. 1 Huddleston, second producer in the Swastika sand pool east of Noodle Creek, in Jones County, after the well flowed 20 bbls. of oil into the pits in 40 minutes. Pay was encountered from 2,912-23 feet. It is a north offset to the discovery well in the area, Humble No. 1 Horton. Also in Jones County, a flow of 475 bbls. of oil in 11½ hours was reported for Humble Oil & Refining Co. No. 15 Hollums, in the north extension area to the Avoca pool in the northwestern part of the county. Saturated Palo Pinto lime was encountered from 3,225-31 feet. Location is in Section 190, B.B.B.&C. Survey.

Two and one-half miles southeast of Eastland in Eastland County, John L. Reeves was reported making preparations to drill his No. 2-B L. C. Downtain. It will seek the same producing horizon found in No. 1-B Downtain and is located 350 feet north of this well.

Location for a new wildcat test on the east side of Throckmorton County is M. G. Cheney No. 1 B. H. Richards, Section 2367. It will be a 4,000-foot test.

In Young County, Pitzer & West have taken over Horwitz & Oldham No. 1 Taack, wildcat 6 miles north of Newcastle, and plan to carry it deeper to the Ordovician. Casing will be set at 4,530 feet in an effort to shut off water from the Marble Falls formation at 4,500 feet.

WEST TEXAS COMPLETIONS

(24-hour tests)

Andrews County

Montecillo Oil Corp. No. 2 E. Cowden, 4,176-4,221 feet, 608 bbls. Sinclair Prairie Oil Co. No. 3 E. Cowden, 4,168-4,215 feet, 1,272 bbls.

Crane County

Gilcrease Oil Co. No. 18 Gibbs, 2,328-37 feet, 20 bbls. Gulf Oil Corp. No. 23 Waddell, 3,510-24 feet, 3,339 bbls.

Ector County

Broderick & Calvert No. 6 Witcher, 4,050-4,230 feet, 1,853 bbls. Continental Oil Co. No. 1-C Kloh, 4,215-71 feet, 130 bbls. Devonian Oil Co. No. 7-F Scharbauer, 4,155-88 feet, 764 bbls. Hilton Oils, Inc., No. 1 J. E. Witcher, 3,995-4,165 feet, 761 bbls. Landreth Production Co. No. 2-O Scharbauer, 4,173-97 feet, 1,203 bbls. Oil Well Drilling Co. No. 4-A Connell, 3,265-3,545 feet, 163 bbls.; No. 5-B Connell, 4,095-4,251 feet, 1,011 bbls. Stanolind Oil & Gas Co. No. 14-B E. F. Cowden, 3,991-4,165 feet, 1,333 bbls. Sinclair Prairie Oil Co. No. 2-B Paul Moss, 3,950-4,002 feet, 90 bbls. Stanolind Oil & Gas Co. No. 6 J. E. Witcher, 3,909-4,167 feet, 433 bbls. Texas Pacific Coal & Oil

(Continued on Page 106)

Texas and Louisiana Gulf

By
NEIL WILLIAMS

Iowa Colony Prospect Will be Tested; Eureka Extended

HOUSTON, Tex., Sept. 26.—The announcement of a wildcat location for the highly regarded Iowa Colony prospect, northwest Brazoria County, attracted much attention during the week. The well will be drilled by Normandie Oil Co. and derrick is being erected on the M. R. Ramsey tract, 330 feet north, and the same distance west of the south corner of a 6.59-acre lease. This area has been worked several times with geophysical instruments and its chances of producing are considered favorable. Leasing and royalty buying have been active for several months with some of the choice royalty spreads bringing from $200 to $300 per acre base.

Southwest of the Cheek field (Lovell's Lake), Jefferson County, George Echols No. 1 American National Bank of Beaumont was coring below 8,300 feet in shale, having cored a broken section of sand and shale with an oil and gas odor, at 8,146-90 feet. The showing was reported to have been in the Marginulina zone, and the operator is in hopes of finding saturation in the Frio formation, which should be topped within the next 300 feet. The well is in the J. J. French Survey on a farmout lease from the General Crude Oil Co. Several major companies hold protection acreage.

Stanolind Oil & Gas Co. No. 1 Schumacher, one-quarter mile northeast of the company's No. 1 Fritz Look, recently completed to open the Rosslyn area, about 4,000 feet east of the Fairbanks field, Harris County, was coring in shale below 7,468 feet, and the well is given little change of producing. A slight showing of gas was reported to have been logged in the 6,900-foot sand and no showing was cored in the 7,200-foot "Goodykoontz" sand which produces in Union Producing Co. well, about 4,000 feet to the north. Offsetting the Look producer, Sinclair Prairie Oil Co. staked location for No. 1 W. W. Goodykoontz in the W. S. Powell Survey.

In the field proper, D. A. Moore and others No. 1 Whitehead and Rash, north end of the field, and about 1,500 feet east of production, flowed 648 bbls. per day through a quarter-inch choke with tubing pressure 550 pounds and casing pressure 1,100 pounds. The well is flowing through perforated casing at 6,848½-51½ feet.

Jack Frazier continues to test No. 1 Laura Lackner, one-half mile west of the Eureka field, Harris County, which has shown evidence of production from a deeper sand. Casing was reperforated at 8,082-94 feet, but the operator has been unable to get the well to flow, and it is the general belief that the perforations have been sealed off. On a recent test at 8,085-95 feet, the well flowed an estimated 25 bbls. of fluid per hour of which 14 per cent was brackish water and the balance 50-gravity oil. Some geologists are of the opinion that the well is producing from the Mount Selman or Cook Mountain formations, while others believe that the well is producing from the lower Yegua, due to a faulted condition in the north part of the field.

Development of the Eureka field has exceeded expectations. Production has been extended within a few thousand feet of the Houston city limits and it is very probable that production will be extended within the residential section. This theory is based on the recent completion of Means & McGehee No. 1-A Laura Lackner, the most northeasterly producer in the field and the first producer completed in the Shady Oaks subdivision. Sand conditions of the well were the same as the same operators' No. 1-C Lackner, 600 feet to the southwest, which was completed as an average producer with a gas-oil ratio of 700 to 1, while No. 1-A Lackner had a gas-oil ratio of more than 7,000 to 1. It is believed that the high gas-oil ratio is due to a faulted condition or the gas cap of the structure has nosed out in this direction. If the latter condition is true, the field is practically assured of being extended several locations eastward. In the extreme southwest part of the field about one-half mile from production, Tide Water Associated Oil Co. has staked location for No. 1 H. H. Ford in the J. Reinerman Survey.

In the Sandy Point field, Brazoria County, Stanolind Oil & Gas Co. was preparing to complete No. 4 J. A. Fite on the southeast side of the field in the D. Talley Survey. The hole is bottomed at 6,500 feet, and 7-inch casing was cemented at that depth. Oil sand was topped at 6,490 feet, and cored to 6,493 feet.

To the southwest and located in the Old Ocean field, Harrison & Abercrombie No. 1 Chenault was extending the field about 1,500 feet as a production test was being made after oil sand was cored in the 10,000-foot zone. The hole is bottomed at 10,258 feet with 7-inch casing cemented on bottom.

Offshore Test Abandoned

On the McFaddin Beach salt dome, offshore from Jefferson County in the Gulf of Mexico, Humble Oil & Refining Co. abandoned No. 8-B McFaddin at 3,250 feet. Salt was topped at approximately 3,094 feet, and cored to the total depth. The rig is being moved over for No. 13-B McFaddin, 660 feet north of the abandoned hole.

Locations for two wildcats were made in Jackson and Lavaca counties. In Jackson County, Chapman Minerals Corp. staked location for No. 1 Bennett Ranch in the Valentine Garcia Survey, while in Lavaca County, Midway Oil & Royalty Co. is moving in material for No. 2 J. Michaleik in the Jack Survey.

In the Segno field, Polk County, Gulf Oil Corp. was adding a third producer to the 8,100-foot sand, as No. 3 Ragan was being completed. Oil and gas showings were logged at intervals from 8,084-8,143 feet, and 5-inch casing was cemented at 8,144 feet after the hole had been cored to a total depth of 8,146 feet. Approximately 2 miles to the east, Humble Oil & Refining Co. was swabbing No. 9-B Kirby Lumber Co., which failed to flow after the casing was perforated at 8,103-10 feet. An unestimated amount of oil has been recovered while the hole was being swabbed.

Location for an interesting semiwildcat was made by the Texas Co. about 4,000 feet southeast of the Manvel field, Brazoria County. The well is located on the E. F. Davis 400-acre tract in the Thomas Spraggins Survey.

The Spurger field, Tyler County, was extended by Republic Production Co. No. 12 Hurd fee, 933 feet west of production. Broken sand and shale with a showing of oil was cored at 7,653-84 feet, and 7-inch casing was cemented at 7,657 feet.

Coastal Louisiana

Opening of new producing sands at the Port Barre field in St. Landry Parish and at the Venice dome in Plaquemines Parish, together with the announcement of three interesting wildcat locations were the outstanding developments in the Coastal Louisiana district.

In the Port Barre field, St. Landry Parish, Pan American Production Co. No. 3 Garland, 3,000 feet southeast of production, flowed 622 bbls. of 39.2-gravity oil per day through a quarter-inch choke. The well is producing from a new sand cored at 5,428-46 feet.

North of production at the Venice dome, Plaquemines Parish, Tide Water Associated Oil Co. No. 1 Buras Levee Board, Section 23-21s-30e, was completed through perforated casing at 5,618-58 feet, and is flowing 330 bbls. per hour through various chokes. The new sand is approximately 2,000 feet above the main sand which is found between 7,100 and 7,200 feet.

An extension to the Lake Long field, Lafourche Parish was made as Fohs Oil Co. was running casing in No. 5 State-Lake Long, 1,320 feet due south of No. 4 State, recently completed in a deeper sand. Sand showing oil was cored at 10,228-37 feet, and casing was cemented at 10,250 feet after the hole had been cored to a total depth of 10,267 feet. Showings of oil and gas were also cored in the 9,400-foot pay.

Humble Oil & Refining Co. added another oil well to the North Crowley field, Acadia Parish, with the completion of No. 1 H. J. Thevis, Section 34-8s-1e. On a 24-hour gauge through a three-sixteenths inch choke, the well flowed 458 bbls. The hole is bottomed at 7,198 feet, with 7-inch casing cemented at 7,193 feet.

In the Timbalier Bay field, Lafourche Parish, Gulf Oil Corp. plugged back No. 4 State to 5,314 feet after a production test through perforated casing at 5,330-40 feet tested mud, with no showing of oil and gas. This is the first production test since the hole was plugged back after salt was encountered at 7,224 feet.

Union Sulphur Co. was preparing to recomplete No. 1 O. Miller at the Woodlawn field, Jefferson Davis Parish, after the well began making a large quantity of salt water. It was originally completed through perforated casing at 8,911-15½ feet and flowed an initial gauge of 380 bbls. in 24 hours through a three-sixteenths inch choke.

Four miles north of the Tepetate field, Acadia Parish, Atlantic Refining Co. No. 1 Klumpp, Section 12-7s-2w, was being watched with interest as it cores below 7,669 feet. Slight showings of oil and gas were reported to have been logged above this depth.

In northern St. Bernard Parish and located in the western portion of Lake Borgne, in Township 12s-15e, Gulf Oil Corp. has made location for No. 4 State. This is a geophysical prospect of several thousand acres and the well will be the first drilled in the lake.

Fifteen miles west of the Hester dome and southeast of the town of Donaldsonville, St. James Parish, Shell Petroleum Corp. has staked location for No. 1 Shexnayder in Section 38-12s-15e.

In the West Gueydan field, Vermilion Parish, Pure Oil Co. has apparently defined production to the northwest as No. 1 Vermilion Irrigation, Section 41-12s-2w, is shut down in salt water sand at 7,222 feet which is approximately 150 feet below the discovery horizon. No shows have been reported.

Republic Production Co. made a location for an interesting wildcat along the Conroe trend in Beauregard Parish. The well is on the Lutcher-Moore Lumber Co. lease in Section 14-7s-12w, about 7 miles northeast of the Bancroft field.

Location for an interesting outpost test to the Bancroft field, Beauregard Parish, was made by George E. Lilley for No. 1 W. K. Rice, Section 15-6s-13w, about a half mile due east of the discovery oil well and approximately 1½ miles due south of No. 1 Lutcher-Moore Lumber Co., a gas well. West of No. 1 Columbia Land & Timber Co., the discovery oil well, Republic Production Co. staked location for No. 1 Columbia Land & Timber Co., 940 feet due west.

COMPLETIONS ON TEXAS COAST

(24-hour production)

Brazoria County

Danbury field: McBride and others No. 1 Bassett Blakely, 2,155 feet, abandoned. Hastings field: Humble Oil & Refining Co. No. 11 South Texas Grain Co., 6,123 feet, 399 bbls., eighth-inch choke. West Columbia field: Texas Co. No. 26 Abrams, 5,211 feet, 12 bbls. per hour, quarter-inch choke. Texas Co. and Sterling Oil & Refining Co. No. 8 J. E. Phillips Petroleum Co., top sand 5,544 feet, 5,602 feet, 518 bbls., quarter-inch choke.

Galveston County

Dickinson field: Atlantic Refining Co. No. 7 Jones, 8,135 feet, 262 bbls., quarter-inch choke. Humble Oil & Refining Co. No. 24-A Stewart, 8,930 feet, abandoned. Greens Lake field: Sun Oil Co. No. 2 Houston Farms

(Continued on Page 93)

North Louisiana, Arkansas

By
GEORGE WEBER

Shreveport Outpost Close to Completion; Extend D Sand

SHREVEPORT, La., Sept. 26.—A "mystery" well, being drilled in the Broadmoor section of Shreveport, was the center of attention during the latter part of the week, as the outcome of the 7-mile outpost wildcat of the Shreveport field cored the Pettit lime.

Completion of a good well in the "D" sand of the lower Marine series at Cotton Valley marked the most important development in that field. Activity has been increasing at Schuler, in Union County, Arkansas, but the curtailment of production ordered by the Board of Conservation this past week may have some effect in slowing down drilling.

The most interesting wildcat of the week, F. W. Martin Drilling Co. and Superior Oil Co. No. 1 Querbes, was still a mystery at the end of the week. The test, in Tract 8 of Section 20-17-13, in the Broadmoor development southeast of the city, is coring the lime although no definite information on what was found, is available. According to subsurface information in comparing the tops of the main anhydrite stringer two weeks ago, the well was considered to be running 10 or 12 feet higher than the Allison well, which opened the Shreveport field. The Martin well is located 7 miles southeast of the Allison producer, however, and such data cannot be heavily relied upon. The wildcat has been coring considerably in the past few days.

Production by Pool

Estimated daily gross production all companies week ending September 23:

NORTH LOUISIANA

	Barrels
Bellevue	620
Caddo light	3,910
Caddo heavy	2,470
Converse	485
Cotton Valley heavy	90
Cotton Valley light	*11,300
Cross Lake	635
De Soto and Red River	1,300
Elm Grove	375
Haynesville	3,130
Holly	110
Homer	2,675
Lisbon	5,945
Pleasant Hill	125
Rodessa	34,610
Sarepta-Carterville	†480
Sligo	1,455
Sugar Creek	325
Urania	2,650
Zwolle	3,200
Total	75,890

SOUTH ARKANSAS

Buckner	1,370
Champagnolle	1,040
El Dorado	1,840
Lisbon	270
Miller County	395
Nevada	620
Rodessa	6,435
Schuler	29,320
Smackover light	2,050
Smackover heavy	16,025
Stephens	560
Troy	1,200
Urbana	1,175
Village	600
Total	62,900

Texas side of Rodessa field 31,035 bbls. daily.

*3,750 bbls. is distillate.
†200 bbls. is distillate.

In an offset position to the discovery well, R. E. Allison No. 2 Ellerbee is drilling lime below 4,700 feet and will be approaching critical depth shortly. The same operator is drilling below 1,000 feet in No. 1 State also in the vicinity of the discovery well.

In a southwest outpost location, the Hollywood Oil Corp. No. 1 C. & B. Realty Co., just west of the Mansfield Road, is getting under way.

In Cotton Valley, the most important test is Standard Oil Co. of Louisiana and Oliphant Oil Corp. No. 1 Stewart, a southwest edge producer, C NE NE Section 32-21-10. The test was originally completed as a gas distillate producer in the Bodcaw sand at 8,700 feet. Success of the Mid-States Oil Corp. in bringing in a producer in the "D" sand, just above the Bodcaw, prompted the reworking of the Standard well.

It was plugged back 8,700 feet to 8,530 feet, and casing was perforated at 8,512-22 feet, in the "D" sand. The well was recompleted after an initial production of 361 bbls. in 11 hours. Gauge was through a 26/64-inch choke. Tubing pressure stood at 700 pounds and casing pressure at 1,425 pounds. The gas-oil ratio is 1,230 to 1.

The Standard well is located a little over a mile west of the Mid-States "D" sand producer. They are the only two producing from that horizon to date.

On the east edge of production, Hunt Oil Co. No. 1 Pardee, C SE NE Section 22-21-10, this week cored the top of the "A" sand, the first stringer in the lower Marine series. An odor and stain of oil was reported in this sand. The test is drilling ahead.

The Stanolind Oil & Gas Co. is getting under way for their second test in the field. The first was No. 1 Pardee, which brought in first oil production in the Bodcaw sand. The current test is No. 1 Webster Investment Co., and is located between the field proper and the 1¾-mile Pardee outpost.

Lisbon activity has died out completely. The field has been declining in drilling operations for several weeks. The 60 per cent cut in pipe line takings, coupled with the reduction in price of Lisbon crude from 98 to a top of 92 cents, indicate that drilling will not revive to any extent in the near future.

Arkansas Developments

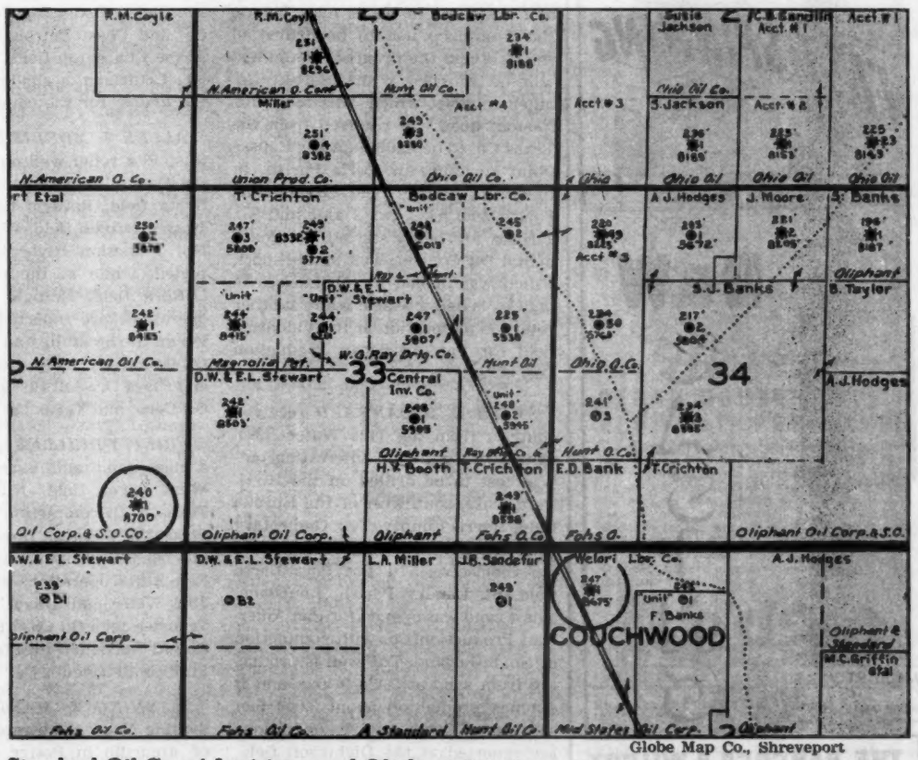
Regulation of production took the limelight in Arkansas during the past week. Following a hearing in El Dorado last Thursday, the State Board of Conservation cut Schuler production in the Jones sand back from a top of 23,000 bbls. to 19,000 bbls. daily. A further cutback to 16,000 bbls. is scheduled for October 1.

Schuler is the most active drilling field in the tri-state area, however, and drilling will probably hold up to a high level for several weeks. With 28 rigs active it is hitting its greatest development spurt. Completed during the week was E. M. Jones No. 1 Gallagher, Lot 4, NW SW Section 18-18-17, for 320 bbls. per day through a one-half inch choke. Tubing pressure was 325 pounds and casing pressure was 925 pounds. Total depth is 7,660 feet.

Miller County, the Arkansas extension of Rodessa, is also due for more conservation measures. The board on September 29 will release an order calling for an investigation of production methods and reservoir conditions in the field. The investigation will consist of a seven-day shut-in of all oil wells a month hence, in order to aid in determining an average reservoir pressure, to study the pressure differentials in different areas of the field, and also to ascertain whether or not repressuring of the oil sand would be feasible.

Although the top allowable of 100 bbls. daily was placed on the field, it affects only a few wells, the others being unable to make that allowable.

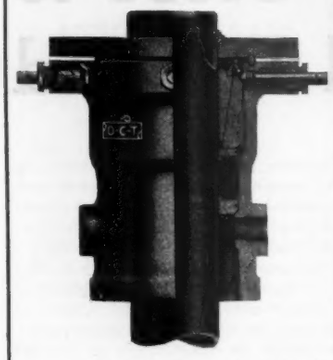
In the Jefferson section of the Rodessa field, in Marion County, Texas, Arkansas-Louisiana Gas Co. brought in a south outpost well in No. 1 J. A. Badgett, Allen Urquhart Survey. The test gauged 192 bbls. per day through a quarter-inch choke with tubing pressure of 100 pounds, casing pressure of 725 pounds and gas-oil ratio of 338 to 1. Total depth is 5,998 feet. The well is in Jefferson townsite.



Globe Map Co., Shreveport

Standard Oil Co. of Louisiana and Oliphant Oil Corp. No. 1 Stewart in Cotton Valley, second producer in the D sand of the lower Marine series. It is over a mile west of the first well in that deep horizon, in Section 3

O-C-T
TYPE C-9-PS
SLIP SUSPENSION
CASING HEAD



Permits landing casing at any desired point. Permits drilling and running casing through blowout preventer equipment flanged above. Packing, slips, and slip bowl passes through blowout preventer to seat in body of head. Packing compressed by weight of casing. Hold-down screws aid in compressing packing. Available with or without welding flange, which holds casing down and effects auxiliary seal above slips. Test pressures up to 10,000 lbs.

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Among the Drilling

GIBSON & JENKINS of Wichita Falls, Tex., have made a location for their No. 3 Howard to give the northeast corner of Montague County, North Texas, a deep test. The wildcat is in Section 90, Kaufman County School Lands, about 10 miles northeast of Nocona and is a proposed 3,600-foot rotary test on a tract about midway between the Holt and the Hott pools. Two dry holes already have been drilled on the block, one of which was carried to 2,000 feet and the second to 3,000 feet.

ARROW DRILLING CO. of Odessa, Tex., seeking to extend production in the Foster pool of Ector County, West Texas, farther to the east, has staked its No. 4 Foster, in Section 8, Block 42, T-2-S, T.&P. Survey. It is 719 feet east of No. 3 Foster, most eastern producer completed the past week for an initial of 944 bbls. daily.

NICKLOS DRILLING CO. received contracts for two interesting tests to be drilled in coastal Louisiana. One large rotary is being moved to the Tepetate field, Acadia Parish, for Continental Oil Co. where No. 1-A Homeseekers Development Co., an 8,300-foot producer, will be killed and deepened to 10,000 feet. This is the first deep test to be drilled in the field and the progress of the test will be watched with interest. Another contract which calls for a 10,000-foot hole, was received from the Texas Co. to be drilled on the Fausse Point structure in Iberia Parish. In the Villa Platte field, Evangeline Parish, two tests, No. 2 Tate and No. 2 Haas, are being started for Continental Oil Co. One well at Lockport, which was drilled for Nicklos Drilling Co., is being tested, while another rotary is on location at the Valentine field for Pan American Production Co.

SMITH & McDANNALD received contract from the Tide Water Associated Oil Co. for an interesting outpost test to be drilled on the H. H. Ford lease, southwest of the Eureka field, Harris County, Tex. One rotary is being moved to the Withers field for themselves. In the Port Barre field, St. Landry Parish, Louisiana, a new sand was opened for Pan American Production Co. with completion of No. 3 Garland. The well is producing from sand at 5,428-46 feet and it extends production about 3,000 feet southeast. Other active operations are reported at the Dickinson field, Galveston County, Texas, for Pure Oil Co., Lake Long, Louisiana, for Tide Water Associated Oil Co.; Acadia Parish, Louisiana, for Shell Petroleum Co., and at Raceland for Tide Water Associated Oil Co.

CRON & GRACEY received contract for another test on the Whitehead and Rash lease in the north end of the Fairbanks field, Harris County, Texas. It will be drilled for Moore & O'Hern. Shell Petroleum Corp. No. 3 McFaddin, Clam Lake field, is drilling below 1,600 feet, while for the same company at the Gibson field, Terrebonne Parish, Louisiana, No. 1 Kuntz is being tested below 8,800 feet. Casing was cemented on Fohs Oil Co. No. 5 Lake Long, La., a 10,000-foot hole in the Lake Long field, Lafourche Parish, Louisiana. Another rotary is operating in East Placedo field, Victoria County, Texas, for Stanolind Oil & Gas Co.

GEORGE ECHOLS is reported to have cored favorable showings in his No. 1 American National Bank, a wildcat south of the Cheek field in Jefferson Parish, Louisiana. In the Hardin field, Texas, his No. 1 West is being completed.

HARRY L. EDWARDS DRILLING Co. has two operations in the Dickinson field, Texas, for Mid-States Oil Co. and Coast Petroleum Co., while at the Charenton field, St. Mary Parish, Louisiana, a shallow well is being drilled for the company.

ALLEN & MORRIS are preparing to spud a relief well on the Missouri Pacific Railroad right of way in the Greta field, Refugio County, Texas. In the Refugio field, W. R. R. Oil Co. No. 3 Mission River is being completed, while at the newly opened LaRosa field, Refugio County, two operations are reported for I. J. Allen on the Spualing and Rooke leases. Other activity is reported at the Luby and Clara Driscoll fields for Seaboard Oil Corp. and Texas Co.

TRINITY DRILLERS, INC., opened a new sand and extension in the West Saxet field, Nueces County, Texas, with completion of Carlos Oil Corp. No. 1 Smith, flowing pipe line oil from approximately 4,000 feet. Five other operations are in Nueces, Jim Wells and Duval counties for Transwestern Oil Co., Continental Oil Co., Al Buchanan Production Co. and Phillips Petroleum Co.

MANNING & MARTIN, INC., is drilling No. 1 Bush ranch northwest of Amarillo in Potter County, Texas, as a test for the Sinclair Prairie Oil Co. Considerable trouble has been encountered as the result of

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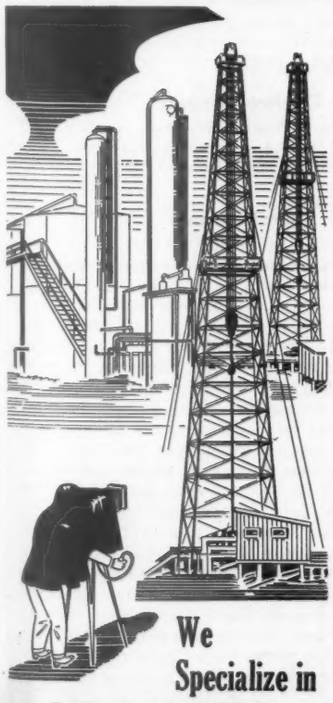

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lost circulation in soft and cavey formations. The well is now drilling below 3,650 feet.

MANAHAN DRILLING CO., Tulsa, is drilling No. 1 Putnam in the T. W. Ward Survey, Abstract No. 1089, Cooke County, North Texas, for Sinclair Prairie Oil Co. Recently coring was being done in lime below 5,742 feet. Manahan Drilling Co. is also drilling No. 1 Felts in Section 35-6s-2w, in shale below a depth of 7,623 feet for Sinclair Prairie Oil Co., near Oswalt in western Love County, Oklahoma.

LOFFLAND BROTHERS CO., Tulsa, is drilling No. 3 Brandon for Mid-Continent Petroleum Corp. and others in Section 13-18-2e, in the Ramsey community block southwest of Stillwater in Payne County, Oklahoma.

KIRK-GREEN-WAY, INC., Tulsa, is rigging up to drill No. 5 Columbia in Section 18-18-2e, Ramsey pool, Payne County, Oklahoma, for Mid-Continent Petroleum Corp. This contracting company is drilling on after setting surface casing in No. 1 Gray in Section 18-18-2e; this well is being drilled for the same operating company.

MORTER BROTHERS, Ardmore, Okla., are shut down for orders at 3,700 feet at No. 1 Johns, in Section 19-1n-3w, for Skelly Oil Co. in the old Robberson pool of Garvin County, Oklahoma.

SUMMIT DRILLING CO. is drilling below 4,600 feet in the Mayes lime in NW cor. SW Section 4-11-5e, north of Shawnee, in Pottawatomie County, Oklahoma.

L. A. FARRIS and *JOHN F. DUWE*, drilling contractors and oil producers of Wichita, Kans., and Gilmac Oil Co. are drilling No. 1 Parker as a wildcat test in the SW Section 29-6-23w, northwest of Hill City in Graham County, Kansas, where drilling is being done below 3,738 feet in the Lansing lime.

HELMERICH & PAYNE of Tulsa are drilling an important test for Texas Co. in the Livermore-Wright area of east central Cochran County, West Texas. It is the No. 1 Della Slaughter Wright, League 123, Potter County School Lands, and about 1¾ miles northwest of George P. Livermore No. 1 Wright, small producer and discovery well in the area. The test is making an estimated 30 bbls. of oil daily while cleaning out after being shot with 120 quarts from 4,880-4,910 feet. Should this test prove to be a commercial producer, it will indicate another good-sized North Permian Basin field for West Texas.

O. W. DYER of Houston, Tex., is completing Atlantic Refining Co. No. 2 Dumas in the Schuler field of Union County, South Arkansas. The well is on the southeast edge of the field.

COLCOMB & THOMASON, drilling contractors of Shreveport, La., brought in a south extension well in the Jefferson extension of Rodessa during the past week. The well, Arkansas Louisiana Gas Co. No. 1 Badgett, made an initial gauge of 192 bbls. per day on a quarter-inch choke.

YORK & HARPER, of Midland, Tex., completed a one-half mile southwest extension to the Moss pool of Ector County, West Texas, when No. 2-B Paul Moss, drilled for Sinclair Prairie Oil Co., pumped 90 bbls. of oil in 24 hours on its Railroad Commission gauge. Located in Section 40, Block 44, T-2-S, T.&P. Survey, the well was shot with 165 quarts after plugging back to 4,000 feet from 4,169 feet.

O'DONOHOE-GIBSON DRILLING CO. of Wichita Falls, Tex., has received contract from Texas Co. for its first test in the three-horizon Hull & Silk pool of Archer County, North Texas. It will be the company's No. 34-A L. F. Wilson, Lot 13, Block 29, A.T.N.C.L. Survey, and a north offset to the discovery well in the 4,300-foot pay section. The test is contracted to 4,300 feet and is about a half mile southeast of the discovery well in the 3,800-foot pay section, the depth from which the pool was first discovered early in the year.

HOUSH & THOMPSON are preparing to spud an interesting wildcat on the Old Ogburn prospect in Harris County which is being drilled jointly for the McAlester Fuel Oil Co. and Continental Oil Co. The well is on the J. J. Sweeney lease in Section 5, Block 2, W.C.R.R. Survey.

SIMPSON & NOBLE, Wichita, Kans., completed the fourth gas well in the Lyons (Arbuckle) gas pool of Rice County, Kansas, for Atlantic Refining Co. This well is known as No. 1-B Pullian; it is in the S half Section 35-19-8w, and is a south offset to the discovery well; it was completed for 51,000,000 feet of gas per day. The Arbuckle was topped at 3,249 feet and drilled to a total depth of 3,277 feet.

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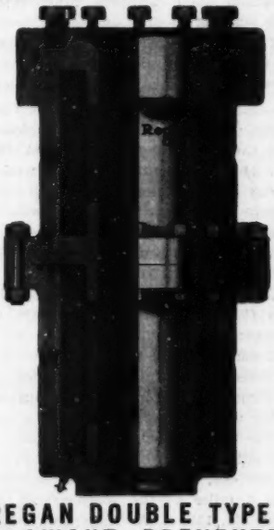

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Southwest Texas District

By
F. L. SINGLETON

Ezzell Extended 6,000 Feet; McMullen County New Pool

CORPUS CHRISTI, Tex., Sept. 26.—The opening of a Government Wells sand pool in McMullen County, and an important extension to the shallow Ezzell field in Live Oak County and a new sand discovery for the West Saxet field, Nueces County, provided the most interesting developments in the Southwest Texas district the past week.

Five miles east of the Loma Alta field in the A.B.&M. Survey No. 57, McMullen County, William H. Spice No. 1 H. C. Edrington is flowing an estimated 50 bbls. of pipe line oil per day and an unestimated but large flow of gas. The hole is bottomed at 2,519 feet with the Government Wells section showing saturation at 2,492-18 feet. This is the third field recently opened in the county and has resulted in a number of wildcats being started. One and a half miles northeast of the new discovery, Barbara Oil Co. is moving in material for No. 1 W. C. Edrington in the A. B. & M. Survey No. 79.

In the same county and located in the newly opened Munson field, Bishop Oil Co. has started an extensive drilling campaign and is preparing to complete three wells on the Nueces Land & Livestock Co. lease in the B.S.&F. Survey No. 119. No. 1-B cored sand at 1,205-13 feet and is being completed. No. 2-A cored sand at 1,205-13 feet and has been completed on the pump, but no gauge has been reported. No. 3-A cored sand at 1,206-13 feet and is being tested. Two important outposts have been started. Northeast of production about 2 miles, Mills Bennett Production Co. is starting to drill on No. 1 Nueces Land & Livestock Co. in Section 168, while southwest of the field, Joe Cosner and others are rigging up for No. 1 Nueces Land & Livestock Co. in Section 177.

A third producer was added to Tesoro field, Duval County, with the completion of Arkansas Fuel Oil Co. No. 3 Cuellar Brothers, Section 96, B.B.B.&C. Survey. On a 24-hour potential test, the well flowed 85 bbls. per day through a one-eighth inch choke, with tubing pressure 1,500 pounds and casing pressure 1,900 pounds. The hole is bottomed in the Cockfield sand at 5,109 feet, and production was obtained by perforating the casing at 5,070-93 feet.

Along the same trend and located in the Fitzsimmons field, Duval County, Sun Oil Co. No. 2 J. R. Brueggeman, 1,300 feet south of No. 1 Brueggeman, cored sand at 4,285-89 feet, the total depth, and was completed for an initial production of 107 bbls. per day through a 9/64-inch choke. During the past week, drilling activity has shown a slight increase, and location for two important outpost wells have been made. Four miles southeast of the field in the A.B.&M. Survey No. 409, J. W. Cosner has spudded No. 1 Garcia, while 3 miles to the southeast in the Julia Rogers Survey No. 118, R. A. Thompson has rig up for No. 1 Parr.

Ezzell Field Extended

The first activity in the shallow Ezzell field in Live Oak and McMullen counties has resulted in a 6,000-foot southwest extension as Harry Ezzell and others prepare to complete No. 22 fee, Section 35. Gas sand was cored at 1,506-07 feet and oil sand at 1,507-29 feet. Sand was also drilled at 1,780-1,801 feet and 7-inch casing was cemented at 1,554 feet. This is one of the most important shallow discoveries along the Jackson trend which extends southwesterly from the east half of Live Oak County into McMullen County for a distance of approximately 4 miles. The structure is only defined in a few directions on the north end and it is reported that several interesting outpost tests will be started on the south end of the structure by Ezzell and his associates.

A new sand discovery in the West Saxet field, Nueces County, extended production a half mile eastward. Carlos Oil Corp. No. 1 Smith, O. Martinez Survey No. 420, is flowing approximately 225 bbls. per day through a 5/32-inch choke from perforated casing at 4,070-75 feet. The main pay in the field is in the Frio zone at 5,700-5,800 feet although several wells are producing from the 3,800-, 5,600- and 6,400-foot horizons.

In the same county and in the Saxet field, Richardson Petroleum Co. No. 24 Cain & Sechrist, has attracted much attention due to an attempted blowout at 9,902 feet, total depth. The high gas pressure stuck the drill stem and the hole may be abandoned. This is the deepest test in the field.

Along the Frio Vicksburg trend, development is being started in the newly opened Kelsy and Sun fields in Jim Hogg and Starr counties by Humble Oil & Refining Co. and Sun Oil Co. Approximately 3,700 feet north of the Kelsey discovery well, Humble Oil & Refining Co. has rig up for No. 3 Mrs. Anna Kelsey Bass, while in the Sun field, Starr County, Sun Oil Co. is preparing to spud two wells. They are No. 1 Augustin Olivarez and others, three-quarters of a mile northwest of the discovery well in the C.C.S.D.& R.G.N.G. Survey, Section 239, and No. 1 Lydia Speer, 1 mile southwest of the discovery in Section 274. No new wildcat locations have been announced for this particular section, although it is rumored that several tests are to be started in the near future.

In the LaReforma field, Starr County, and about 5 miles northeast of the Sun field, Magnolia Petroleum Co. was preparing to complete No. 1 Garcia, 2,300 feet southwest of the discovery well. Following a drill stem test last week at 5,928-34 feet which tested 1,000 pounds of pressure and 75 feet of distillate-cut mud, 7-inch casing was cemented at 5,937 feet.

Balcones Fault

Interest in the Balcones Fault Line district was centered on the Edwards lime test of Paul Teas and others No. 1 J. T. Grizzard, 8 miles south of Smithville in the Andrew Graham League, Bastrop County. The Edwards lime was reported topped at 7,023 feet, and a slight odor of oil was reported to have been logged at 7,043 feet. However, the hole is being carried deeper after a drill stem failed to recover any showings of oil or gas.

In Frio County, the prospective pool opener of Humble Oil & Refining Co. No. 1 Schley, Jos Travalder Survey No. 174, is drilling in shale at 5,170 feet. This test showed for a pool opener in the Austin chalk at 3,595-3,617 feet, but no production test will be made until the test is drilled to the Edwards lime.

South Alice Field

The South Alice field, Jim Wells County, was further defined on the north and southeast sides with the abandonment of two wells. Approximately 1½ miles north of production, Mills Bennett Production Co. and others No. 1 C. C. Forry was abandoned at 5,559 feet. Only slight showings were logged in the 5,300-foot sand. On the extreme southeast side of the field, Pan American Production Co. and others No. 2 Cook, is bottomed at 5,329 feet and was expected to be abandoned as it is reported several feet lower than No. 1 Cook, a dry hole one-quarter mile to the northwest.

In the southeast portion of the field and one-half mile from production, Reese & Dunn No. 1 C. B. Stilwell, Block 61, Collins Farm Lots subdivision, cored sand showing oil at 5,300-11 feet, and 5½-inch casing was cemented at 5,363 feet, the total depth.

Operators in this district are now watching the progress of Humble Oil & Refining Co. No. 1 Ben Belitz, a wildcat, 2 miles north of Ben Bolt, in the Stanfert Survey. Broken sections of sand, and sandy shale showing oil and gas, were cored at intervals at 3,555-66 feet, and at 3,940-50 feet. A 20-minute drill stem test at 3,946-50 feet tested 2½ pounds of working pressure and 85 feet of oily mud. Northwest of Bentonville in the A. De la Garza Survey, Humble Oil & Refining Co. No. 1 John True was abandoned at 5,730 feet. A drill stem test at 5,644-5,730 feet tested 270 feet of oily mud and 390 feet of salt water and 80 pounds of working pressure.

Three miles southwest of Ben Bolt, Magnolia Petroleum Co. staked location for No. 1 R. Moreno in the La Trenidad grant and material is being moved to the location. Due east of the Banderia field, the same company is drilling in shale below 7,154 feet with no showings reported. At this depth the hole is several hundred feet below the producing level in the discovery well.

COMPLETIONS

Aransas County

McCampbell field: Conservative Oil Co. No. 2-B Dunn, 7,142 feet, 91 bbls., 9/64-inch choke. Shasta Oil Co. No. 1 Shasta & Brahney, 7,239 feet, plugged back 6,870 feet, 110 bbls. plus 50 per cent salt water, three-sixteenths inch choke.

Bexar County

Von Ormy field: Tom Owen No. 3 Fest, 718 feet, 3 bbls., pumping. Shadrock Oil Co. No. 11 Barragan, perforated casing 580-650 feet, 5½ bbls., pumping. Shadrock Oil Co. No. 14 Barragan, perforated casing 635-60 feet, 5 bbls., pumping.

Caldwell County

Branyon field: Coffield & Robinson No. 5 Young, 2,348 feet, 51 bbls., 50 per cent sulfur water. Rio Bravo Oil Co. No. 18 Merriweather, 2,135 feet, abandoned.

Duval County

Benavides field: Arkansas Fuel Oil Co. No. 12 Rossi, 3,910 feet, 55 bbls., 12 hours, 9/64-inch choke. Benedum & Trees No. 18 Puig, 4,736-41 feet, 138 bbls., 5/32-inch choke. Casa Blanca field: Magnolia Petroleum Co. No. 9 Duval County Ranch Co., 1,178 feet, 38 bbls., pumping 16 hours, 4 per cent salt water. Eagle Hill field: V. G. Schimmel, 1,527 feet, 63 bbls., pumping. Fitzsimmons field: Houston Oil Co. No. 3 Fitzsimmons, perforated casing 4,310-22 feet, 368 bbls., quarter-inch choke. Porter Drilling Co. No. 2-B Driscoll, perforated casing 4,330-46 feet, 180 bbls., 5/32-inch choke. Hoffman field: Cox, Hamon and others No. 38 Cuellar, 2,837 feet, 175 bbls., pumping; No. 39 Cuellar Brothers, sand 2,814-24 feet, 175 bbls., half-inch choke. Cox & Hamon No. 44 Cuellar, sand 2,824-30½ feet, 201 bbls., pumping. Cox, Hamon and others No. 2 Hoffman, sand 2,755-60 feet, 35 bbls., pumping. Magnolia Petroleum Co. No. 12 Well, 2,810 feet, 8 bbls., pumping. North Kohler field: Stewart & Nye No. 1 Peters, perforated casing 1,853-60 feet, 105 bbls., pumping. Seven Sisters field: Texas Co. No. 2 Meek, 2,685 feet, 96 bbls. oil, 12 hours, pumping.

Guadalupe County

Darst Creek field: McCabe & Dabb No. 1 Denman, 2,644 feet, 71½ bbls. oil, 121 bbls. sulfur water, pumping.

Jim Wells County

South Alice field: Robert Bowles No. 3 Ragland, perforated casing 5,253-59 feet, 94 bbls., 3/32-inch choke. R. B. Bryant No. 1 Stillwell, perforated casing 5,260-91 feet, 208 bbls., three-sixteenths inch choke.

(Continued on Page 103)

North and East Texas

By
D. H. STORMONT

K. M. A. Extended 4 Miles; Drilling Spurt in E. Texas

WICHITA FALLS, Tex., Sept. 26.—Activity in North Texas was highlighted over the past week by the definite extension of the K.M.A. pool into Wilbarger County and the possibility of a one-half mile extension to the east for the Canyon sand pool in the southern part of Wichita County.

Four-mile west extension into Wilbarger County of the 3,800-foot pay of the K.M.A. pool was assured when Consolidated Oil Co. No. 1 G. B. Ancell, Section 35, Block 6, H.&T.C. Survey, wildcat test, was completed for 200 bbls. of oil per day. The well is producing through perforated casing from total depth of 4,127 feet.

Half-mile east extension for the Holliday Canyon sand pool of southern Wichita County, just north of the Archer County line, was indicated in King Oil Co. No. 2 Perkins-Collum, Block 20, Denton C.S.L. Survey. The test cored oil sand from 2,627 feet to 2,631 feet, total depth, and was running 7-inch casing at the close of the week.

Archer County

In the Hull-Silk pool of northern Archer County, the location for a 4,300-foot test by the second major company to enter the play and the possibility that a second test would be carried to the 5,100-foot level featured developments in the county. Texas Co. made its first location in the three-horizon pool when it staked its No. 34-A L. F. Wilson, in Lot 13, Block 29, A.T.N.C.L. Survey. The test is a north offset to the discovery well in the 4,300-foot pay section and about a half mile southeast of the discovery well in the 3,800-foot pay. Sinclair Prairie Oil Co. No. 1 Hood, in the northeast corner of Lot 3, Block 18, about 2 miles due west of the most northern producer in the pool, missed the 3,800- and 4,300-foot horizons and may be carried to the Ordovician at 5,100 feet. The wildcat was bottomed at 4,407 feet in shale and lime.

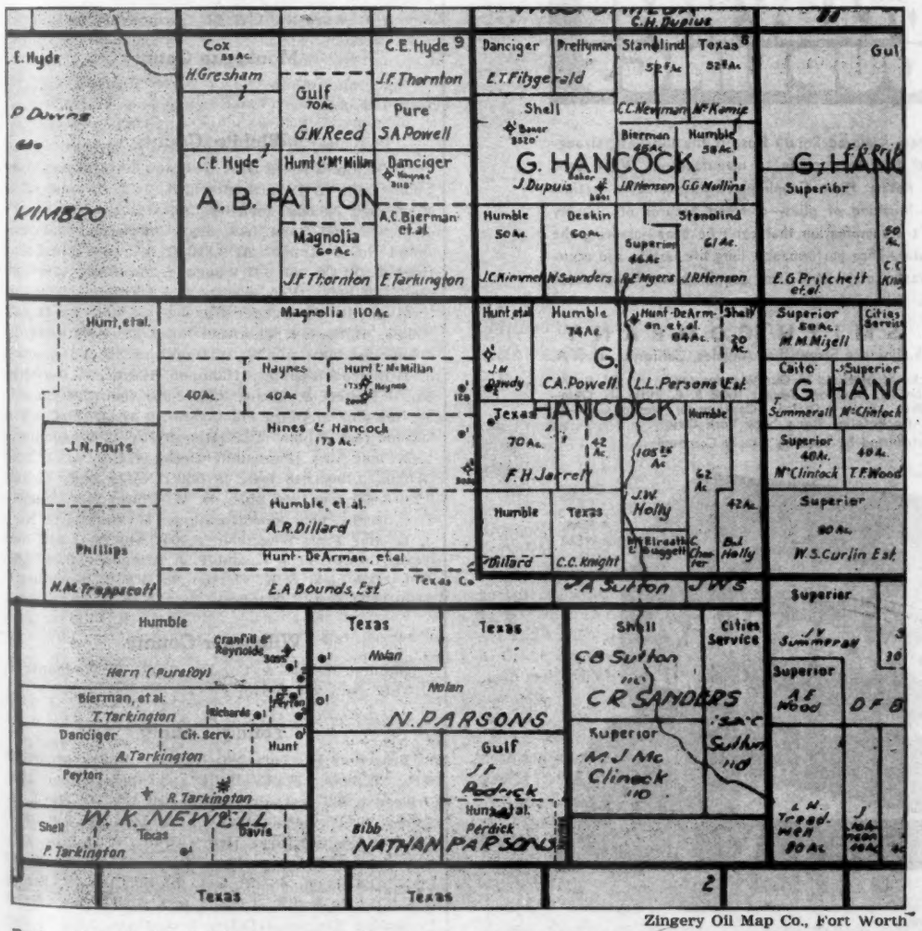
Grayson County

Second producer for the Collinsville area of Grayson County, Mildred Oil Co. and Kerr-Lynn No. 1 Neatherly, continued to sustain early predictions when a potential of 259 bbls. of oil daily was reported on an initial gauge. The test was made on the pump over a 24-hour period and the well is expected to be given an allowable of 100 bbls. per day, due to its distance from the first well in the area. It is producing from sand at 3,862-74 feet.

EASTERN TEXAS

DALLAS, Tex., Sept. 26.—Activity in Eastern Texas showed an increase during the past week with a larger number of drilling wells and new locations reported in the East Texas field and a general increase of developments in several East Central Texas fields including Flag Lake in Henderson County, Percilla area, and the Navarro Crossing fields in Houston County, and the Talco pool in Franklin and Titus counties.

The Flag Lake pool, over the past week, received a mile extension to the southwest, a new northern outpost location, and the possibility of another well being completed in the south extension area. Texas Co. completed its No. 1 J. P. Tarkington, William K. Newell Survey, for 135 bbls. of fluid, 8 per cent salt water, on a 24-hour gauge. The well adds approximately 1 mile of new territory to the southwest end of the field. A new wildcat drilling operation for the pool was expected to commence at the close of the week when rig and equipment was being moved in for Tyler & Smith No. 1 Phoenix Realty Co. in the Hicks Survey. It is approximately 4 miles north and a little east of the discovery well in the pool. DeArman & Hunt No. 1 A. B. Tarkington, in the William K. Newell Survey, south offset to one of the Peyton Brothers producers, cemented casing at 3,040 feet after coring sand from that depth to 3,050 feet, total depth. The sand was not very porous and it is probable that the well will be given a shot after plug is drilled.



Zingery Oil Map Co., Fort Worth

Entire Flag Lake field of northern Henderson County showing recent completions in the field proper and Texas Co.'s 1-mile south extension

Houston County

In the Percilla area of northern Houston County, John G. Mayo was rigging up for his No. 1 Vera Ann Warrock. The test will be in the John Sheridan Survey and about 2 miles east of Hunt No. 1 Elliott, single producer in the area. In the northwest corner of the county Humble Oil & Refining Co. is completing its No. 1 J. A. Hill, southeast of the discovery well in the Navarro Crossing field, as a gas producer. On production tests the well gauged 2,190,000 feet of gas through perforated casing from 5,822-24 feet. About three-quarters of a mile west of this test, Humble is drilling ahead after setting 115 feet of surface pipe in its No. 1 M. B. Hill.

Talco Pool

About a half-mile southwest extension was given the extreme western edge of the Talco pool in eastern Franklin County with the completion of Humble Oil & Refining Co. No. 5 Norman & Prince, in the M.E.P. &P. Survey. The outpost was completed for an initial of 351 bbls. daily from a total depth of 4,286 feet. Top of the sand was 4,200 feet with 5½-inch casing cemented at 4,205 feet.

Navarro County

Two wildcat tests seeking shallow Corsicana sand pay were started during the week in Navarro County. Ivy & Sitton staked their No. 2 Marshall, in the G. J. Chambers Survey, and as the week closed they were reported to have encountered the expected pay and were bailing about 1 bbl. of oil per day with hole bottomed at 650 feet. Touchy & Barnes are drilling their No. 1 G. H. Love, in the D. W. Collins Survey, 3 miles east of Drane.

EAST TEXAS FIELD COMPLETIONS

(1-hour tests)

Gregg County—Longview Area

Gilcrease Oil Co. No. 5-A A. Tooke, 3,551-77 feet, 152 bbls. A. D. King No. 2 Doby, 3,687-3,707 feet, 60 bbls. Joe Long Drilling Co. No. 37-A W. W. Owens, 3,572-78 feet, 25 bbls. Roat & Rhodes No. 2 Clements.

3,552-98 feet, 64 bbls. Shell Petroleum Corp. No. 30 A. N. and V. King, 3,552-3,694 feet, 64 bbls.

Gregg County—Kilgore Area

O. D. Adams No. 5 Presbyterian Church, 3,546-60 feet, 15 bbls. Cities Service Oil Co. No. 14 Lockhart, 3,524-3,611 feet, 32 bbls. O. R. Cooper No. 7 A. V. Compton, 3,521-33 feet, 30 bbls. Gulf Oil Corp. No. 31 A. Muchleroy, 3,560-71 feet, 62 bbls. Roger Lacey No. 4 Douglas, 3,537-46 feet, 50 bbls. B. W. Moore No. 2 Foltz, 3,537-39 feet, 30 bbls. B. F. Carroll No. 1 fee, 3,544-64 feet, 25 bbls. Potter Brothers No. 3 Crim, 3,540-70 feet, 35 bbls. Shell Petroleum Corp. No. 23 Willoughby, 3,533-3,618 feet, 72 bbls.

Smith County—Joiner Area

Weaver-Crim No. 12 T. Stone, 3,765-68 feet, 60 bbls.

Rusk County—Joiner Area

Humble Oil & Refining Co. No. 4 A. Scott, 3,731-71 feet, 70 bbls.; No. 11 F. F. Wooster, 3,730-46 feet, 40 bbls. Hunt Oil Co. No. 19-C C. D. Ashby, 3,555-3,614 feet, 8 bbls. Ohio Oil Co. No. 52 S. H. Moore, 3,632-3,709 feet, 30 bbls. Richards & Holloway No. 1 J. W. Ashby, dry and abandoned at 3,704 feet. Sun Oil Co. No. 14 Selman, 3,648-3,700 feet, 40 bbls.

Upshur County—Longview Area

W. W. Bradley No. 11 O. F. Smith, 3,645-47 feet, 50 bbls.

EAST CENTRAL TEXAS COMPLETIONS

(24-hour tests)

Angelina County

J. C. Bonham No. 6 Cameron Lumber Co., dry and abandoned at 642 feet.

Anderson County

In the Long Lake field, L. Hunt No. 1 Shaw & Cern, 5,180-5,296 feet, 115,000,000 feet of gas. In the Cayuga field, Phil Top Oil Co. No. 1 G. Perkins, 4,082-89 feet, 117 bbls. Wynne Drilling Co. No. 1 Loper, dry and abandoned at 4,067 feet.

Franklin County

In the Talco field, Byrd-Frost No. 7 R. Evans, 4,175-4,218 feet, 87 bbls.

Henderson County

In the Cayuga field, F. M. Allison No. 9 Pettiette, abandoned location.

Houston County

W. W. Hinchliffe No. 1-A Long Leaf Lumber Co., dry and abandoned at 2,512 feet.

Madison County

Merritt Oil Co. No. 1 Gustavas, dry and abandoned at 4,300 feet.

NORTH TEXAS COMPLETIONS

(24-hour production)

Archer County

L. T. and P. C. Burns No. 1 T. B. Wilson, 1,327-feet, dry. Helmerich & Payne and others No. 3 L. F. Wilson, 4,364-81 feet, 1,024 bbls. Shappell Oil Co. No. 12 Grace Vell, 1,023-32 feet, 138 bbls. Texas Co. No. 1 J. Conner, 1,257 feet, dry.

Clay County

P. C. Davis and others No. 1 O. T. Roach, 253 feet, dry.

Cooke County

B. F. Thompson No. 1 J. Weisman, 1,328 feet, dry.

Jack County

Atwood and others No. 1 J. H. Shown, 370 feet, dry. Benoil Co. No. 1 E. Hagg, 3,129 feet, dry. Bissey and others No. 1 M. N. Brown, 350 feet, dry. C. O. Crockett No. 1 J. P. Hoefle, 582 feet, dry. Cunningham and others No. 1 H. Jackson, 428 feet, dry. Grace & Barrow No. 2 J. M. Bloodworth, 312-23 feet, 10 bbls. Martex Oil Co. No. 2 A. B. Kuykendall D, 3,220 feet, dry. J. C. Ward No. 1 W. M. Crowley, 500 feet, dry.

Montague County

Seitz and others No. 4 J. N. Roach B, 2,131-37 feet, 156 bbls.

Wichita County

D. H. Bolin No. 2 D. R. Preston, 3,938-78 feet, 1,800 bbls. Bolin & Whittington No. 7 J. L. and T. J. Waggoner, 3,950-80 feet, 600 bbls. Carey & Carey No. 1 J. A. Kemp, 4,051 feet, dry. Continental and Hammond No. 1 Munger A, 3,810-47 feet, 488 bbls. Continental Oil Co. No. 3-B Waggoner Brothers, 3,770-3,819 feet, 720 bbls. C. A. Evertz and Harding, abandoned location. R. W. Gutzler No. 5 J. Jennie, 234-41 feet, 3 bbls. Harbele & Thornton No. 2 First National Co., abandoned location. W. B. Hamilton No. 2 Henson A, 3,724-73 feet, 808 bbls. Hammon, Hanlon & Buchanan No. 6 Fassett & Tuttle, 3,875-3,959 feet, 724 bbls.

Hawkins McQuigg Oil Co. No. 6 W. D. McClure A, 390-400 feet, 5 bbls. T. F. Hunter No. 42 Waggoner A, 1,827 feet, dry. Panhandle Refining Co. No. 1 Reily Griffin, 3,790-3,848 feet, 48 bbls.; No. 2 Reily Griffin, 3,740-3,805 feet, 990 bbls. D. W. Power Nos. 2 and 3 L. C. Denny, abandoned locations. M. Stainiforth No. 2 J. L. and T. J. Waggoner, 3,700-3,840 feet, 648 bbls. Texas Co. No. 17 J. L. and T. J. Waggoner, 3,747-3,817 feet, 1,056 bbls. S. K. Vierson No. 2 R. L. Kempner C, 3,770-3,820 feet, 1,064 bbls.

Wilbarger County

Stanley Wynne & Co. No. 9 W. T. Waggoner F, 2,400-17 feet, 260 bbls.

Young County

Brazelton Brothers No. 1 M. E. McBrayer, 663-78 feet, 20 bbls. F. E. Butler and others No. 1 N. Prideaux, 803 feet, dry. Cable Oil Co. No. 12 L. A. Snider, 594-95 feet, 5 bbls. J. Chambers No. 2 S. M. J. Benson, 981 feet, dry. Henry Craig No. 1 Mrs. E. I. McClatchey, 1,121 feet, dry. Kleiner Hy Oil Co. No. 62 C. W. Langston, 563-78 feet, 10 bbls. A. T. Strong No. 1 J. M. Smith, 3,841-54 feet, 1,200 bbls. Union Production Co. No. 1 Corley and others, 3,812-74 feet, 60 bbls. oil 9,000,000 feet of gas. E. D. Willis No. 2 G. Stewart B, 833-49 feet, 102 bbls.

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Oklahoma Operations

By DAL DALRYMPLE

Wilcox Sand Pool Opener in Prospect in Garfield County

Southern Oklahoma operators with production in the old Robberson pool in Garvin County were threatened with a loss of outlet for their crude by Cosco Refining Co.'s decision to withdraw from the pool as a purchaser. Cosco Refining Co. sent out notices that effective September 17 at 7 a.m. it would cease to buy crude oil. This company has been the only purchaser of crude oil in the Robberson field for two years, having taken over the connections of the Magnolia Pipe Line Co. at that time, and used the latter's gathering lines in assembling the crude for delivery to its refinery at Wynnewood, Okla. Magnolia is taking the production from its own leases, and it is hoped by other producers that it will make connections to their properties. In the Healdton pool in Carter County producers were given official notice last week by the Pure Oil Co. that effective October 12 at 7 a.m. it would cease to buy crude oil in that field, but assurance of an outlet was had when the Ben Franklin Refining Co., which recently purchased the Wirt Franklin Refining Co.'s plant at Ardmore, Okla., started in the past week mailing out division orders to producers in the Healdton field in anticipation of starting runs from the field to its plant by October 15. The Ben Franklin Refining Co. is to take over the Pure's connections and gathering system and pay the current posted prices.

Wildcat Activity

The most interesting field news came from the Champlin Refining Co. No. 1 Boehm, important wildcat test in the northwest corner of Garfield County, in SW SW NE Section 4-24-8w. Reports stated that the well blew out sending mud, water and oil half way up the derrick, and immediately various estimates of the well's capacity of gas volume and oil potentiality were ventured. It was reported that when the safety valve was opened the gas roar was loud enough to be heard 5 miles away. Some estimated the gas volume as high as 15,000,000 feet, but as the well settled almost immediately after the first head flow it was uncertain how much gas was present and if any oil was showing. First Wilcox sand was found at 6,658 feet and a core around 6,698 feet indicated a slight oil stain in the lower 2 feet. Second Wilcox sand was logged at 6,690 feet and the hole cored to a total depth of 6,702 feet. The well was shut in, but on Friday it was opened at 1 p.m. and made one head flow. It was again shut in and reopened and flowed mud and water but quit in 30 minutes. Later it produced gas at the rate of 250,000 feet per day, after which it was shut in. Upon being reopened it flowed oil for 50 minutes at the rate of 20 bbls. per hour with gas at the rate of 7,000,000 feet per day. At this writing it was shut in for tankage and is regarded as a prospective pool opener.

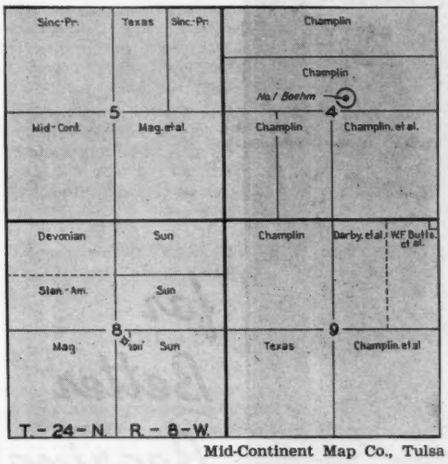
At Kerlyn Oil Co. No. 1 Orphanage, wildcat north of Britton in Oklahoma County, in the SE SW NW of Section 21-13-3w, thinning formations and small oil stains at 6,595-6,600 feet encouraged interested parties, and the outcome of the test is being closely watched since production at the well would open a considerable area to the north and south of the Britton townsite. Late reports had the well down to 6,615 feet in Simpson formation and drilling ahead.

Reports from the Texas Co.'s wildcat north of Apache in southern Caddo County, No. 1 Smith, C NE NW Section 2-5n-12w, stirred oil men into a flurry of lease buying. Although no definite information was forthcoming relative to any oil-bearing formations, some reports stated a slight show of oil was found. The bit went out of the Pontotoc formation and into the Woodford around 1,548 feet, with cores in the latter showing a steep dip which was to be expected in an area as complex as this one is.

Several important locations for wildcat ventures were announced during the week. Phillips Petroleum Co. announced location for No. 1 Mandler, SE SW SW Section 1-6-10e, Hughes County, which will attempt to find commercial production in the Wilcox sand. The test is on a seismograph block north of Calvin and is about 9 miles northeast of the same company's No. 1 Becker, which failed in the Wilcox sand, but found the Viola lime and Cromwell sands productive. In the same general area the Magnolia Petroleum Co. is reported to have made a deal to drill a Wilcox sand test on its block in the N half of Section 27-5-11e.

Payne County Venture

Another major wildcatting venture in northern Oklahoma is definitely assured with Mid-Continent Petroleum Corp.'s announced location for a Wilcox sand test in the NE cor. Section 27-17-2e, 6 miles southeast of the Ramsey field, and in the northern part of Lincoln County. Drilling operations are scheduled to get under way by October 1, with several major companies contributing in support of the test.



Mid-Continent Map Co., Tulsa

Champlin Refining Co. No. 1 Boehm, in most northwesterly township in Garfield County, looks like a Wilcox sand pool opener

Also in northern Oklahoma Continental Oil Co. began moving in materials for a Wilcox sand test at No. 1 J. J. Donahoe, in the NW cor. SW Section 16-18-2w, northwest of the Ramsey pool in Logan County.

At the same time Tide Water Associated Oil Co. started preparations for a deep test on the southwest flank of the old Dilworth pool in Kay County. The new test is No. 1 D. Hockman, C NW SE Section 18-28-1e.

Olson Oil Co. and others No. 1 Vaneck, 340 feet north and 1,030 feet east of the C Section 4-12-3w, Oklahoma County wildcat, northwest of the Oklahoma City field, was completed for 288 bbls. of oil in 24 hours, flowing its production through tubing with an estimated 2,250,000 feet of gas. Production is coming from the second Wilcox sand, with the hole bottomed at 6,776 feet, and plugged back to 6,766 feet. At 6,739-65 feet it was shot with 48 quarts of nitroglycerin. The well is relatively deep for the amount of production and it is unlikely additional development of the area will be rapid.

British American Oil Co. No. 1 Markwell, C E half E half NE Section 26-12-4e, was abandoned at 5,512 feet, after running the gamut of formations down and into the second Wilcox sand. The test is located 3 miles southeast of Meeker in southern Lincoln County.

A relatively large gas producer was completed by the LeFlore County Oil & Gas Co. at No. 27 Orr, SE NW NW NE Section 12-6-22e, northeastern Latimer County. After shooting the Hartshorne sand pay at 2,030-2,155 feet the well came in for 8,700,000 feet of gas, with 390 pounds rock pressure.

A. D. Speers No. 1 Vinson, SW NW SW Section 29-8-5e, Seminole County wildcat, found second Wilcox sand to be white with salty characteristics and having no favorable showings in upper horizons the test was abandoned 4,506 feet.

Boettcher Oil & Gas Co. abandoned No. 1 Morgan, Seminole County wildcat, SE NE NW Section 8-5-7e. Salt water was encountered in the Cromwell series at 2,600 feet, and after drilling to 2,622 feet, total depth, it was abandoned.

Elm Oil Co. No. 1 Plemons, SW SE NE Section 8-5s-6e, northern Marshall County wildcat, was abandoned at 2,022 feet, total depth, after failing to find any shows. The Arbuckle horizon was found at the relatively shallow depth of 542 feet.

Osage County

In Osage County, Sinclair Prairie completed its No. 8, NW NW NE Section 26-24-10e, for 45 bbls. of oil in 24 hours on the pump in Bartlesville sand at 1,684-1,741 feet, total depth, after shooting with 60 quarts of nitro. C. B. Houston No. 5, SW cor. Section 28-23-9e, got a hole full of water in the Buzzard sand and was abandoned at 446 feet, total depth.

Seven new operations were reported in Osage County. Indian Territory Illuminating Oil Co. staked location for its No. 458, 990 feet south and 1,300 feet east of the C Section 9-26-11e; Harland Oil Co. started preparations to deepen No. 25, SE NW NW Section 25-24-11e, old total depth 1,711 feet. Same company deepened No. 22, NW cor. Section 25-24-11, from the old depth of 1,687 feet in Bartlesville sand, to a new depth of 1,707 feet, where it pumped 4½ bbls. of oil in 24 hours; Sidwell Drilling Co. started deepening No. 2, NW NE NE Section 35-24-8e, with old total depth at 2,495 feet; Ray Branstetter was rigging up machine No. 2, 250 feet north and 400 feet west of the SE cor. Section 29-22-11e, Osage County, and Johnson Oil & Refining Co. announced location for its No. 21, 181 feet east and 21 feet south of the center of Section 30-21-9e.

Okfuskee-Okmulgee-Muskogee Activity

O. B. Quinn No. 1 Martina and others, SE NW SE Section 26-10-10e, Okfuskee County, failed to extend the gas-producing limits of the small gas area, a quarter mile to the east and the test is abandoned at total depth of 3,495 feet, where it had a hole full of water.

Rebolt Oil Co. No. 2-A Mitchell, 600 feet north and 1,720 feet east of the SW cor. Section 31-15-14e, Okmulgee County, found the pay in Red Fork sand at 1,673-1,719 feet, total depth, which developed a small producer, the well actually making 8 bbls. of oil in 24 hours on the pump, after a 30-quart shot.

Vierson Brothers completed a dry hole at 1,757 feet, total depth, in No. 16 Starr, NW SE SW Section 30-15-14e, Okmulgee County.

E. M. Dodge No. 14 Payne, NE SE SE Section 17-15-14e, was shot with 60 quarts at 799-820 feet, total depth, in an unidentified pay zone and is a 10-bbl. well on the pump.

D. W. Howard No. 2 J. Howard, NW NW SW Section 33-15-15e, Muskogee County, pumped 10 bbls. daily after a 60-quart shot in sand at 1,316-93 feet, total depth.

New work in the Okmulgee-Okfusgee-Muskogee area follows: Culpepper & Anthony started spudding in

their No. 1-A Legon, NW NE SE Section 25-14-14e. J. E. Dow is drilling deeper at No. 8 Ed Hart, C W half NE SE Section 4-14-14e, old total depth 1,250 feet, and the bit is down to 1,285 feet at this time; Dick Walker was drilling by tools at No. 1 Castle, an old well being deepened in the SE SW NW Section 2-11-11e; Suppes & White were drilling at 130 feet in No. 3 Alexander, 200 feet south and 1,170 feet east of NW NE Section 35-11-9e.

Pottawatomie County

Northern States Oil Syndicate No. 2 Williams, NW NE NW Section 14-7-4, St. Louis pool, Pottawatomie County, was completed in the Calvin sand, total depth 3,179 feet, pumping 100 bbls. of oil and 10 bbls. of water in 24 hours. Oil tested 42 gravity.

J. F. Smith and others No. 1 Latimer, NW cor. Section 21-7-4e, St. Louis pool, flowed 160 bbls. of oil in 24 hours from the Earlsboro sand at 3,534-50 feet, with total depth at 3,553 feet.

In the southeastern part of the St. Louis pool of Pottawatomie County, Harold Berkey No. 2 School Land, NW NE NE Section 36-7-4e, pumped 441 bbls. of oil and 1,400 bbls. of water from Simpson dolomite 4,264-72 feet, total depth.

J. E. Trigg found Simpson dolomite good for 619 bbls. of oil and 100 bbls. of water in his No. 3 Vanselous, SE NE SE Section 32-7-5e, St. Louis pool, but in the Seminole County sector, with pay logged from 3,985 feet to 4,077 feet, total depth.

Continued success of operators in finding newer producing strata and productive spots throughout the St. Louis pool of Pottawatomie County has kept this famous field busy through all sorts of economic ups and downs. During the past week eight new operations were recorded in the pool, as follows: Bucy-Betts Petroleum Co. No. 1-A Sullivan, SW SW SE Section 25-7-3, location; Phillips Petroleum Co. No. 6 Fried, SW NE NE, a twin well, spudding in. Magnolia Petroleum Co. No. 1 Denton, NE NW SW Section 22-7-4, being reworked and successfully uncovered a new horizon at 3,187-3,235 feet, when pipe was perforated at that depth, that yielded 20 bbls. of oil in 24 hours on the pump. Old total depth was 4,214 feet. Magnolia did likewise in its No. 5 Hilton, SE NW NW Section 22-7-4, but in this well the new pay was encountered upon deepening from 3,182 feet to 3,203 feet, where it flowed 40 bbls. of oil in 24 hours through casing; Clark & Co. were spudding No. 1 Engle, NW SE NE Section 27-7-4. Bucy-Betts Petroleum Co. had cellar and pits dug for No. 1 Martin, NE SE SW Section 34-7-4. F. W. Cooper Drilling Co. No. 1 Bewley, SW SE NW Section 36-7-4e, was a rig up and Deep Rock Oil Corp. was building rig in the SW SE SW Section 30-7-5e for No. 6 Tolan.

Estimated Daily Production

Estimated daily production for Oklahoma for the week ending September 24, and for the preceding week, was as follows:

	Barrels	
	Sept. 24	Sept. 17
Allen	6,775	5,650
Billings	4,850	4,700
Burbank	8,425	8,475
South Burbank	10,625	10,550
Balance Osage	18,900	18,750
Blackwell district	4,550	4,525
Bristow-Slick	6,875	6,900
Chandler	1,875	1,850
Crescent	3,975	4,025
Cromwell	3,475	3,450
Cushing-Shamrock	10,750	11,025
Duncan district	4,550	3,950
Edmond	4,875	5,025
Fish	3,375	2,750
Fitts	36,975	38,000
Jesse	2,000	2,025
Graham-Fox	4,775	4,125
Gray	925	925
Healdton	8,850	9,250
Hewitt	4,025	3,500
Keokuk	4,150	4,275
Konawa	1,350	1,250
Lucien	9,150	8,775
Moore	4,775	4,650
Oklahoma City	92,125	105,250
Olympic	4,750	4,775
Ramsey	2,050	2,100
Sasakwa	1,450	1,275
Sholem-Alechem	2,425	2,650
Seminole district:		
Bowlegs	9,350	7,625
Carr City	3,525	2,925
Dora	4,975	4,425
Earlsboro	5,300	4,550
South Earlsboro	475	400
East Earlsboro	5,025	4,425
Little River	7,550	6,350
East Little River	925	900
Maud	700	625
Mission	1,625	1,325
Seminole	8,550	6,850
East Seminole	1,725	1,600
Searight	2,250	2,525
Total Seminole	51,975	44,525
St. Louis-Pearson	23,750	19,300
Tatums	2,225	2,775
Tonkawa-Garber-Thomas	4,550	4,625
Wewoka	2,175	2,100
Yale-Jennings	3,950	4,000
Other pools	86,000	84,700
Total Oklahoma	448.275	446.775

Seminole County

Atlantic Refining Co. completed No. 1 Pipkin, NE SW NW Section 2-10-5e, North Earlsboro pool, Seminole County, for 85 bbls. of oil in 24 hours on the pump, producing from Wilcox sand at 4,659-66 feet, total depth.

Maradum Oil Co. No. 1 W. C. McDaniel, SE SW SW Section 22-10-7e, one-half mile south of a small productive spot in Seminole County, failed to extend production and the test was abandoned at 3,661½ feet, in Cromwell sand, with the hole full of water.

W. C. McBride, Inc., No. 4 Haulsee, SE SW SW Section 8-9-7e, on the north edge of the East Seminole pool in Seminole County, logged productive Senora sand at 2,653 feet and was completed in that horizon at 2,669 feet, total depth, for 64 bbls. of oil daily.

Rogers Oil & Gas Co. No. 1 Oakes, SW SW SW Section 16-7-6, an east offset to Young & Newsom No. 1 Edgemand, discovery of Wilcox sand production to the extent of 723 bbls. daily, failed to develop into a producer in the Wilcox and the well is abandoned at total depth of 4,447 feet.

Russell B. Patterson No. 1 Konawa City Park, NW SE NW Section 26-6-5, 1 mile northeast of the West Konawa pool, is dry and abandoned at 2,717 feet. The last important marker reported was the Earlsboro sand at 2,612 feet.

Seminole County first reports were Wood Oil Co. No. 1 Louisa, SE cor. Section 22-7-5, a rig, and Rogers & Rogers No. 1 Martha, NW NW NE Section 1-7-7, cellar and pits.

Pontotoc County

Simpson & Roodhouse found Cromwell sand pay at 3,349 to 3,365 feet, total depth, in No. 2 Breco, NE SW SW Section 21-2-6, Fitts pool in Pontotoc County, and the well stands as a completion for 50 bbls. of oil daily on the pump.

C. E. Davis No. 1-D King, NE NE SE Section 32-5-8,

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Allen pool in Pontotoc County, was abandoned at 459 feet.

New work in Pontotoc County follows: Patsey Oil Co. No. 1 Newell, NW NW SE Section 26-2-7, rig up; Arch Oil Co. No. 1 Collins, NE SE NW Section 4-5-6, cellar, and L. B. Sandback No. 1-B Miller, NW NE SW Section 27-5-6, drilling 430 feet.

Southern Oklahoma

George L. Pace and others No. 20 Allen, 1,200 feet south and 912 feet west of the NE cor. Section 3-2s-8w, Empire pool in Stephens County, was completed in Pontotoc sand at 2,203-08 feet, total depth, making 50 bbls. of oil and 1 bbl. of water on its initial pumping gauge.

Clyde Roach No. 1-A Green, SE SE SW Section 2-1-13w, Comanche County wildcat, was abandoned at 925 feet.

Palmer & Palmer No. 5 Grayson, 810 feet north and 1,170 feet west of SE cor. SW Section 19-6s-5w, Spring pool in Jefferson County, is completed for 20 bbls. daily on pump in sand at 1,518-23 feet, total depth.

Ripps-Ungerman No. 6 Penniston, 700 feet north and 150 feet east of SW cor. Section 16-7s-5w, Seay pool in Jefferson County, was dry and abandoned at 860 feet.

Shell Oil Corp. No. 23 Horton, 210 feet south and 265 feet east of center of Section 6-4s-3w, Healdton pool in Carter County, logged Healdton sand series at 1,075-1,183 feet, total depth, and produced 27½ bbls. of oil with 31 bbls. of water in 24 hours.

New work in southern Oklahoma follows: George L. Pace and others No. 21 Allen, NE SW NE Section 3-2s-8w, drilling at 550 feet; Winkler & McQueen No. 1-A Biston, a twin well, 970 feet north and 150 feet east of the SW cor. Section 18-2s-7w, drilling at 75 feet; Shell Petroleum Corp. No. 24 Roy Johnson, 990 feet north and 500 feet west of SE cor. SW Section 4-4s-3w, location; same company's No. 23 Johnson, 675 feet north and 450 feet west of SE cor. SW Section 4-4s-3w, location, and Jim Turner and others No. 4 Collins, NE NW SE NE Section 18-4s-10w, rigging up rotary tools. The last mentioned operation is on Indian Territory Illuminating Oil Co. farmed-out acreage and seeks to find a new pool.

Gulf Coast Fields

(Continued from Page 84)

Development Co., perforated casing 6,808-18 feet, 21 bbls. distillate, quarter-inch choke. Hitchcock field: Maco Stewart No. 5 fee, sand 5,137-45 feet, 528 bbls., quarter-inch choke.

Fort Bend County

Thompson field: Gulf Oil Corp. No. 15-X A. Meyser, top sand 3,145 feet, 3,165 feet, 368 bbls., eighth-inch choke.

Hardin County

Silsbee field: General Crude Oil Co. No. 2 J. C. Caraway, 6,920 feet, 549 bbls., quarter-inch choke.

Harris County

Eureka field: Jack Frazier No. 2 Emma Helberg, perforated casing 7,693-7,726 feet, 411 bbls., quarter-inch choke Fairbanks field: D. M. Moore and others No. 1 Whitehead and Rash, perforated casing 6,848½-51½ feet, 648 bbls., quarter-inch choke. Skelly Oil Co. No. 3 J. H. Emmott, perforated casing 6,823 feet, 751 bbls., quarter-inch choke. Smith and Ownby Drilling Co. No. 4 Gibson, sand 6,836-55 feet, 647 bbls., quarter-inch choke. Windsor Oil Co. No. 6 H. E. Ley, perforated casing 6,845-50 feet, 654 bbls., quarter-inch choke. Windsor Oil Co. No. 1-B C. D. Ley, 6,853 feet, 645 bbls., quarter-inch choke. Friendswood field: Humble Oil & Refining Co. No. 19 Beamer, sand 5,705-6,042 feet, 25 bbls. per hour, quarter-inch choke. Humble field: John Deering No. 1 Cicero, 2,325 feet, abandoned. Tomball field: Humble Oil & Refining Co. No. 12-B Quilter, sand 5,541-63 feet, 523 bbls., quarter-inch choke.

Jackson County

Cordele field: Magnolia Petroleum Co. No. 2 Drushel, sand 2,648-54 feet, 205 bbls., three-sixteenths inch choke.

Liberty County

Esperson field: General Crude Oil Co. No. 31 Moore, 2,613 feet, 418 bbls., quarter-inch choke. Hardin field: Atlantic Refining Co. No. 1 Johnson Finley, 7,720 feet, 5 bbls. per hour, three-eighth inch choke. Gulf Oil Corp. No. 5 J. H. Cessna, perforated casing 7,583-91 feet, 436 bbls., quarter-inch choke. Humble Oil & Refining Co. No. 3 W. S. Partlow, 7,630 feet, 427 bbls., quarter-inch choke. Shell Petroleum Corp. No. 4 Cessna, sand 7,601-17 feet, 496 bbls., quarter-inch choke.

Jefferson County

Spindletop field: Unity Oil Co. No. 1 Greer, 3,960 feet, abandoned.

Orange County

Orange field: Red Bank Oil Co. No. 1 Michel, perforated casing 5,569-75 feet, 600 bbls., quarter-inch choke.

Polk County

Segno field: Gulf Oil Corp. No. 12 S. F. Wing, perforated casing 8,111½-18½ feet, 653 bbls., quarter-inch choke.

Wharton County

Withers field: Bankline Oil Co. No. 1 Broussard-Stoval, 5,548 feet, 198 bbls., eighth-inch choke.

Magnet field: Wolf & Gray No. 1 State, sand 5,525-33 feet, 25 bbls., 3/32-inch choke. Pickett Ridge field: Texas Co. No. 3 Neilson, sand 4,695-4,709 feet, 341 bbls., quarter-inch choke.

Illinois Fields

(Continued from Page 79)

Inc., No. 1 Jefferson Oil & Gas Co., C NW NE Section 16-4s-2e, drill stem test at 2,709-59 feet, open 15 minutes, 30 feet of mud and small show of oil, drilling at 2,842 feet; Price & Parker No. 2-A Hamilton, 40 feet west of No. 2, SW SW NW Section 20-4s-2e, Fredonia top at 2,910 feet, shut down at 3,150 feet for orders.

Randolph County: Cain and others No. 1 Smiley, SE SE NE Section 31-4s-5w, total depth 1,002 feet; Arnes Drilling Co. No. 1 Nicholson, NW SE NW Section 12-5s-9w, Aux Vases at 230 feet, drilling at 325 feet; Badger Oil Co. No. 1 Schroeder, SE NW NW Section 27-6s-6w, drilling at 360 feet.

Saline County: Carpenter and others No. 1 Sloan, SE SE SW Section 32-7s-6e, shut down at 1,590 feet.

White County: Flaherty & Waynesburg No. 1 Choisser, NE NW NW Section 5-8s-7e, drilling at 940 feet.

Williamson County: Geological Oil Syndicate No. 1 Scott, SW SE SW Section 4-10s-2e, drilling at 1,706 feet.

Edwards County: Leach Brothers No. 1 Lee, SW NE SE Section 11-1s-10e, total depth 3,435 feet.

CENTRAL OHIO FIELDS

LIMA, Ohio, Sept. 26.—A 100-bbl. well from Clinton sand in Coshocton County was the best well of the week in the Ohio fields.

In Athens County, Trimble Township, Ohio Fuel Gas Co. No. 166 Sunday Creek Coal Co., Section 35, is a small first Berea gas well at 1,201 feet.

In Coshocton County, Pike Township, Allen Willey and others No. 1 E. A. Bryan, Section 19, made 150,000 feet of gas and 100 bbls. of oil the first 24 hours after a shot in Clinton at 3,205-59 feet.

In Knox County, Jackson Township, Hulse & Kundtz, Inc., No. 4 Lovey A. Stone, Section 10, produced 90,000 feet of gas and 6 bbls. of oil per day from Clinton sand at 3,195 feet.

In Guernsey County, Jefferson Township, George Jewell and others No. 1 B. M. Gibson, Section 7, found Berea sand dry at 1,354 feet. In Washington Township, Jones & Jewell No. 1 J. H. Harding, Section 12, is a gas well good for 400,000 feet in the Berea at 1,327-29 feet.

In Holmes County, Mechanic Township, Bell Brothers No. 1 Katie Erb, Section 13, is a small Berea gas well at 874 feet.

In Licking County, Fallsbury Township, Wittmer Oil & Gas Co. No. 5 U. G. Porter, Section 13, made 85 bbls. of oil the first 24 hours after a shot in the Clinton at 3,032-83 feet. In Hanover Township, North Fork Oil Co. No. 13 John C. Williams, Lot 3, NE quarter, made 7 bbls. of oil the first day after a shot in the Berea sand at 631 feet.

In Medina County, Liverpool Township, Paul Baldwin No. 3 Charles Wolf, Section 18, was dry in the Berea sand at 205 feet.

In Monroe County, Wayne Township, Smith Gas Co. No. 11 L. E. Smith, Section 26, was dry in the Maxon at 1,230 feet.

In Noble County, Beaver Township, Barnesville Development Co. completed two small Berea gas wells, one on the William C. Arick land in Section 11, and the other on the H. B. House tract in Section 16.

In Stark County, Perry Township, Lyons and others No. 1 Edward Kachler, Section 24, found the Clinton sand dry at 4,505 feet.

In Vinton County, Richland Township, Kelch Brothers No. 1 E. C. Wortman, Section 1, was a small Hamden sand gas well at 754 feet.

In Washington County, Barlow Township, McTaggart Gas Co. No. 2 D. W. McFarland, Section 20, is a fair Berea gas well at 1,850 feet. In the same township, Devitt and others No. 2 George W. Robinson, Section 6, was dry in the first Cow Run sand at 787 feet. In Liberty Township, Burkhart Oil & Gas Co. No. 1 Jestena Kendall, Section 10, is a dry hole at 1,445 feet.

Lima Field

In Seneca County, Clinton Township, Sun Oil Co. No. 1 Tiffin Business University, Section 7, is a 10-bbl. producer in the Green sand at 2,085 feet. In the same township, A. J. West has abandoned the location on the Mary Michaels tract in Section 8, and moved the rig to the William Weinberger tract in the NW quarter of Section 18. The location is a few hundred feet north of the Tiffin corporation.

EASTERN KENTUCKY

ASHLAND, Ky., Sept. 26.—A lone completion is included in the report of drilling in the Eastern Kentucky field. South Penn Oil Co. completed No. 111, Flahaven Land Co. land, on Big Sinking, in the Big Sinking district of Lee County. The well reached a total depth of 798 feet and is making 2 bbls. of oil daily.

In Lee County, Rush Cable is down 235 feet in No. 9 E. S. Moore No. 1 on Little Sinking.

In Knott County, Inland Gas Corp. had reached 2,335 feet in slate and shells, in No. 202 Elizabeth Adams, on the right fork of Troublesome Creek, and is deepening No. 33, Virginia-Kentucky Coal Co. land, on Quicksand Creek, with drilling continuing at 1,725 feet. Kentucky-West Virginia Gas Co. made a location for No. 5248, John Salyer land, on Jones Fork.

In Marion County, Kentucky-West Virginia Gas Co. made a location for No. 5247, on the C. W. Preece land, on Peg Fork of Coldwater Fork, and is down 1,243 feet, in slate, in No. 5243, on the Preece land. The same firm was drilling below 915 feet, in sand, in No. 5246, on the Alie Ward land, and is rigging up preparatory to deepening No. 5191 W. R. Crum, nearby.

In Floyd County, Kentucky-West Virginia Gas Co. is grading location for No. 577, Jennie Caldwell land, on Toms Creek, of Levisa Fork, and is drilling at 960 feet, in slate, in No. 574, on the John and Benjamin Sellards land on Levisa Fork. The same company is down 1,693 feet, in Big Lime, in No. 575, on the Henry Slone land, nearby on Levisa Fork, and had reached 1,875 feet, in shale, in No. 576 Julie Ward, in the same neighborhood.

Pure's Deep Fresno County Test Passes the 12,240-Foot Mark

LOS ANGELES, Calif., Sept. 26.—In Huron district, Fresno County, northeast of Coalinga field, Pure Oil Co. has reached 12,240 feet in No. 1 S.P.L. and is still going ahead in search of the possible pay. Some minor showings of oil and gas have been logged in this wildcat but its status from a production standpoint has not been disclosed by company officials. The company has several hundred acres under lease surrounding the well and has been very reluctant to release any data regarding the formations encountered or depth reached. Western Gulf Oil Co. still has several thousand acres under lease in the Cantua district of Fresno County but has not made any further move to undertake additional development. At one time this company had more than 100,000 acres under lease but after drilling four dusters a large portion was either quitclaimed or the lease allowed to lapse. Two of the wells drilled by Western Gulf in this area showed some oil and gas and one would probably be good for about 25 bbls. per day on the beam. Subsequent drilling failed to reveal a substantial accumulation of oil or gas and work has been suspended for several months. Seismograph work indicates the presence of a structure but drilling operations up to the present tend to show it unproductive. One additional test is expected to be drilled either later this year or early in 1939.

California Field Report

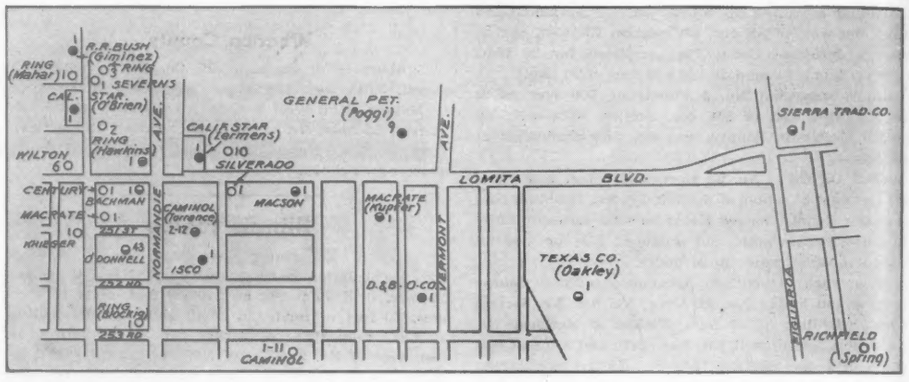
By
L. P. STOCKMAN

Wildcatting Exploration and Deeper Drilling Continuing

LOS ANGELES, Calif., Sept. 26.—Although drilling operations in California have been slowly declining for several months due to the realization that too many completions are seriously hampering crude oil curtailment no diminution has been manifested in wildcat exploration. There is a very noticeable tendency toward aggressive deeper drilling in both Los Angeles Basin and in the San Joaquin Valley as well as at several points in the coastal area in both proved fields and wildcat areas.

East Coalinga

Two additional wells were completed in the East Coalinga field of Fresno County during the current week but this will not result in a lower amount of drilling because operators are making preparations to spud in five additional wells within another week or 10 days. The large production shown by these wells has proven a powerful stimulant and no time is being lost in development work even though production is being curtailed to a very small part of the initial production. These wells are not given potential production tests and are only allowed to flow through small beans upon completion. Those familiar with the area are of the opinion that all four completions made up to date are capable of flowing 20,000 bbls. per day each as they have a lot of kick and are flowing from an exceptionally rich and porous oil sand. Oil produced in this field tests 33.3 degrees A.P.I. and the natural gas contains approximately 2½ gallons of natural gasoline to each 1,000 feet of gas. The structure is believed to be an overlap with production coming from the Avenal sand of Eocene age which is also productive in the Kettleman North Dome field although in a smaller quantity. The western limits of the new productive area at the southern tip of the East Coalinga field has been defined by Universal Consolidated Oil Co. No. 1 Leavitt-Hintze in Section 12-20-15, as this well found Eocene barren. No. 1 Leavitt-Hintze is bottomed in the Cretaceous which is below the Eocene and will probably be abandoned at an early date although every attempt will be made to develop some production from a few small showings logged during the course of work. The well is bottomed at 8,071 feet in a hard black shale.



Harbor City area about 1 mile south of the Lomita section of the Torrance field is the "hot spot" in Los Angeles Basin and will become more active as operators are expected to start about six wells each week

The two new wells completed this week were No. 7-7-F of Petroleum Securities Co. in Section 7-20-16 and No. 1 Hight of Superior Oil Co. in Section 8-20-16. The former was brought in flowing 1,440 bbls. of 33.4-gravity oil and 1,500,000 feet of gas per day through a 22/64-inch bean from 6,925 feet. The hole was finished with 258 feet of 6⅝-inch liner including 217 feet of perforated landed at 6,908 feet and 6,682 feet of 3-inch tubing. Since completion the well has been beaned back to an 8/64-inch bean and is flowing 493 bbls. per day under a tubing pressure of 1,325 pounds and a casing pressure of 1,350 pounds. No. 88-12-C in Section 12-20-15, which Petroleum Securities Co. completed last week, has been cut back to 288 bbls. daily by the use of an 8/64-inch bean and shows a tubing pressure of 1,325 pounds and a casing pressure of 1,775 pounds. No wells in this area are given open flow tests and they are brought in flowing through small beans in order to keep production of the field down to a minimum. Superior Oil Co. No. 1 Hight is the mystery well of the field as it has been completed flowing 958 bbls. of 26.5-gravity oil and 586,000 feet of gas per day from 7,999 feet through a 16/64-inch bean. The great disparity in the quality and gravity oil from this well as compared with that produced in other wells is rather hard to explain as all wells are producing practically clean oil. There is a possibility that No. 1 Hight of Superior may have found a deeper productive zone and this appears plausible as it is considerably deeper than of the other wells completed up to the present.

Superior Oil Co. has just completed a new rig for No. 1 Coalinga fee in section 7-20-16, about midway between No. 1 Hight and the discovery well of Petroleum Securities Co. and an early spud will be made. This well will go a long way toward revealing the trend of the structure as No. 1 Hight, the current weekly completion, is located about 1 mile east of the nearest production. Petroleum Securities Co. has started

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	September 16		September 9			
	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Intercoastal-domestic—						
Crude oil	.....	.....	74,187	10,598	707,487	68,038
Diesel and gas oil	.....	.....	.....	.....	.....	176,726
Gasoline	.....	.....	49,534	7,076	2,437,678	2,942,226
Kerosene	.....	.....	.....	.....	257,005	328,907
Foreign exports—						
Crude oil	94,754	13,536	49,437	7,062	16,552,266	10,066,970
Fuel oil	251,032	35,862	50,642	7,235	6,325,804	9,890,332
Diesel and gas oil	89,295	12,756	218,762	31,252	4,658,810	5,767,323
Gasoline	92,256	13,179	78,268	11,181	5,815,696	6,062,418
Kerosene	.....	.....	.....	.....	687,555	1,589,462
Lubricants	41,226	5,889	.....	.....	144,353	.....
Other unfinished oil	.....	.....	.....	.....	.....	849,163
Coastwise-domestic—						
Crude oil	187,580	26,797	189,035	27,005	8,790,680	3,587,056
Fuel oil	571,954	81,708	293,529	41,933	8,159,168	11,178,470
Diesel and gas oil	40,005	5,715	6,603	943	1,131,165	1,700,681
Gasoline	303,549	43,364	125,442	17,920	10,715,379	11,131,202
Kerosene	.....	.....	7,245	1,035	175,508	308,619

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Diesel and gas oil	.....	.....	17,982	2,569	196,644	152,932
Gasoline	.....	.....	.....	.....	25,409	25,778
Kerosene	.....	.....	.....	.....	16,124	.....
Asphalt	71,339	10,191	.....	.....	490,039	351,394
Lubricants	.....	.....	.....	.....	16,905	25,522
Foreign exports—						
Crude oil	173,103	24,729	20,452	2,922	4,381,530	1,957,468
Fuel oil	42,986	6,141	115,978	16,568	1,940,899	1,613,624
Diesel and gas oil	6,498	928	.....	.....	2,165,059	2,370,799
Gasoline	151,547	21,650	.....	.....	4,340,663	3,745,253
Kerosene	15,396	2,199	78,419	11,203	667,954	700,263
Asphalt	.....	.....	.....	.....	56,258	.....
Lubricants	6,838	977	.....	.....	359,430	425,740
Coastwise-domestic—						
Fuel oil	96,712	13,816	116,905	16,701	4,331,254	4,706,774
Diesel and gas oil	59,104	8,443	15,211	2,173	1,075,849	880,772
Gasoline	260,526	37,218	180,697	25,814	5,717,977	3,741,876
Kerosene	3,680	526	31,753	4,536	385,028	188,822

TOTAL TANKER SHIPMENTS FROM CALIFORNIA TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Crude oil	.....	.....	74,187	10,598	707,487	68,038
Diesel and gas oil	.....	.....	17,982	2,569	196,644	329,658
Gasoline	.....	.....	49,534	7,076	2,463,087	2,968,004
Kerosene	.....	.....	.....	.....	273,129	328,907
Asphalt	71,339	10,191	.....	.....	490,039	351,394
Lubricants	.....	.....	.....	.....	16,905	25,522
Foreign exports—						
Crude oil	267,857	38,265	69,889	9,984	20,933,796	12,024,438
Fuel oil	294,018	42,003	166,620	23,803	8,266,703	11,503,956
Diesel and gas oil	95,793	13,685	218,762	31,252	6,823,869	8,138,122
Gasoline	243,803	34,829	78,268	11,181	10,156,359	9,807,671
Kerosene	15,396	2,199	78,419	11,203	1,355,509	2,289,725
Asphalt	.....	.....	.....	.....	56,258	.....
Lubricants	48,064	6,866	.....	.....	503,783	425,740
Other unfinished oil	.....	.....	.....	.....	.....	849,163
Coastwise-domestic—						
Crude oil	187,580	26,797	189,035	27,005	8,790,680	3,587,056
Fuel oil	668,666	95,667	410,434	58,633	12,490,422	15,885,244
Diesel and gas oil	99,109	14,158	21,814	3,116	2,207,014	2,581,453
Gasoline	564,075	80,582	306,139	43,734	16,433,356	14,873,078
Kerosene	3,680	526	38,998	5,571	560,536	497,441

two new wells and both should be making hole soon. These potential producers are No. 88-7-F in Section 7-20-16 and No. 31-18-F in Section 18-20-16. Magnet Oil Co. drilling a wildcat several miles west of the Gatchell section of the East Coalinga field has hung up tools at 4,801 feet after failing to find the Avenal zone. Jacalitos Petroleum Co. has abandoned its wildcat in the Jacalitos Hills of Fresno County as a duster at 7,267 feet after having cored top of the Kreyenhagen formation at 5,635 feet and failing to pick up the pay. This wildcat is located in Section 14-21-15.

Harbor City

The Harbor City area which may ultimately be found to be a separate and distinct field from the Torrance field less than a mile to the north is the hottest field in Los Angeles Basin with drilling operations climbing by leaps and bounds. The scope of work is also increasing and drilling is being carried on over an area approximately 1 mile wide and both north and south of Lomita Boulevard. Most of the drilling now under way in the Harbor City area is in Section 25-4-14 but extends over into Section 30-4-13. As a matter of fact D. & B. Oil Co.'s discovery well is located just over the section line in Section 30-4-13. During the current week General Petroleum Corp. completed No. 9 Poggi flowing 236 bbls. of 27.9-gravity oil cutting 5 per cent along with 50,000 feet of gas per day and has staked location in the west end of the Poggi lease for No. 10 Poggi which will be an offset of California Star Oil Co. No. 1 Lermens which was completed several weeks ago as a good flowing well.

The Harbor City area has not yet become a factor of any consequence from a production standpoint but with 26 wells either already under way or scheduled to begin making hole immediately production will begin a definite upswing early in October. None of the wells completed in this area has registered substantial production but this does not mean that no large flowing will be finished as there is not sufficient geological data available to make an estimate one way or the other. It is significant to note, however, that most of the drilling done to date has been west and northwest of the discovery well. Texas Co. picked up the pay in No. 1 Oakley located several hundred feet east of the discovery well and should have it ready for a production test very shortly. This is one of the most important wells under way in this area and especially since it has logged the pay higher than it was found in the discovery well or in any other well drilled to date. This tends to indicate the apex of the Harbor City area may be east of the discovery well instead of west where most of the drilling is now being done. No. 9 Poggi of General Petroleum Corp. which extended the productive limits to the northeast was completed flowing through a 30/64-inch bean from 5,120 feet. The hole was carried down to 5,426 feet but was plugged back to 5,185 feet because of bottom water and then back to the completion depth, 5,120 feet.

Torrance—Lomita

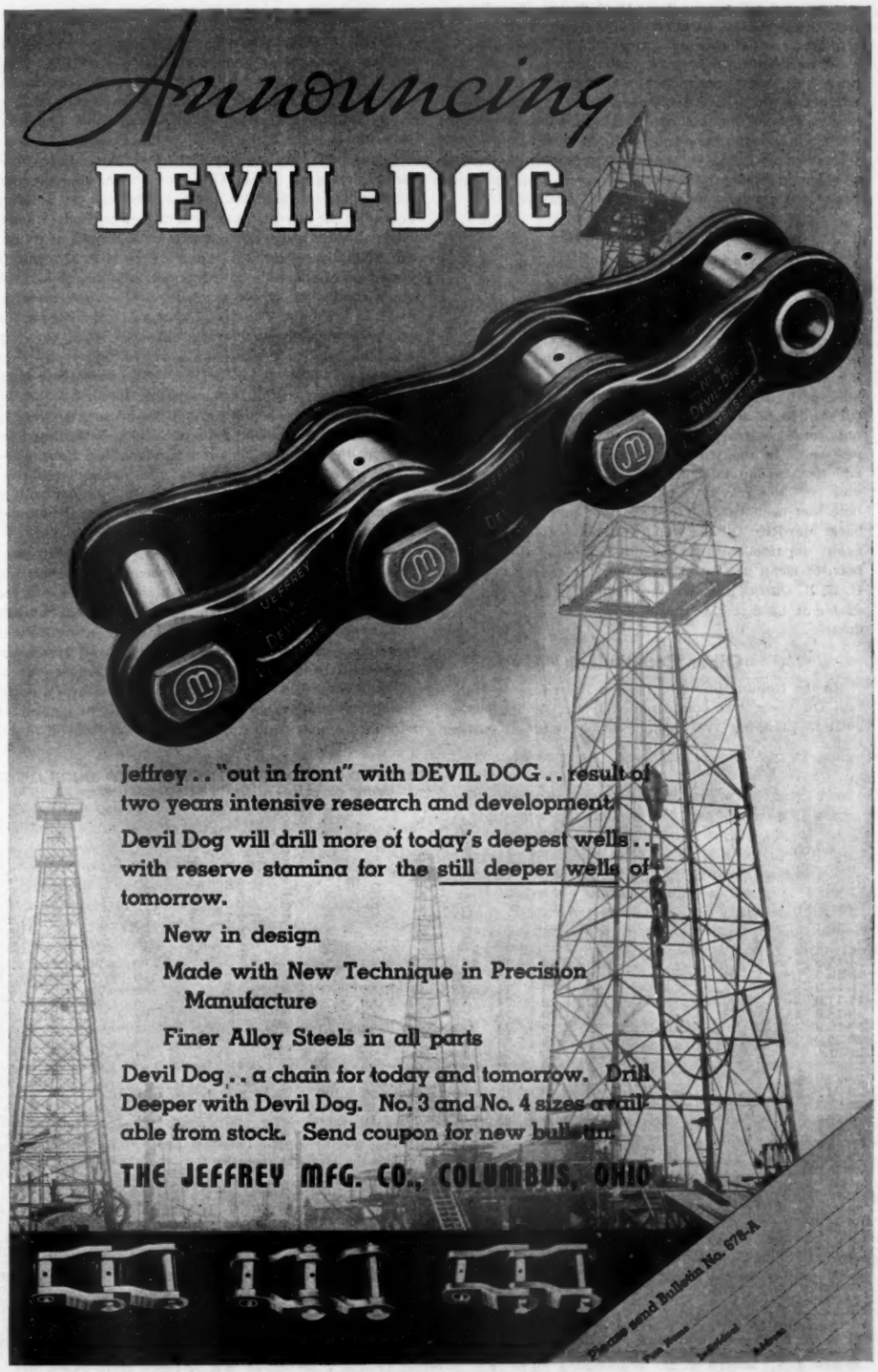
Five new wells and two former upper zone producers were completed in the Lomita section of the Torrance field this week and a check of development work under way indicates that another similar group should be completed next week. It appears probable the drilling peak has been reached in this field unless subsequent drilling indicates that the Harbor City area is a component part of the Torrance field in which event a considerable number of wells would be drilled in the intervening area. The two recompletions this week were No. 8 Torrance of Chanslor Canfield Midway Oil Co. finished pumping 110 bbls. of 26.2-gravity oil cutting 7 per cent after the hole had been redrilled and deepened from the upper to the lower zone at 4,997 feet and Kenber Oil Co. No. 1 Lomita finished flowing 198 bbls. of 26.4-gravity oil cutting 4 per cent from an even 5,000 feet. Caldale Oil Co. No. 1 Lomita proved to be a rather small producer upon completion as it was only good for 120 bbls. of 26.3-gravity oil cutting 9 per cent from 4,980 feet on the beam.

The largest completion this week was Kovell Oil Co. No. 3 Lomita finished flowing 529 bbls. of 25.9-gravity oil and 450,000 feet of gas per day from 4,965 feet through a 32/64-inch bean. Current production of the deep zone in the Lomita section of the Torrance field totals 15,456 bbls. per day from 129 wells indicating that the zone now undergoing development has failed to hold up. The decline just about offsets the amount of new production chalked up each week as a result of new completions. J. E. Pettijohn No. 1 Lomita has been completed flowing 515 bbls. of clean 25.6-gravity oil daily from 4,967 feet and Consolidated Petroleum Co. No. 3 Davidson was finished flowing 340 bbls. of very clean 25.7-gravity oil per day from 4,965 feet. No. 1 Monica of R. L. Goetz has been completed flowing 272 bbls. of 26.3-gravity oil cutting 2.5 per cent from 4,969 feet after the hole had been finished with 177 feet of 5¾-inch liner including 152 feet of perforated and 68 feet of 4¾-inch liner all of which was perforated. The 5¾-inch liner froze at 4,913 feet thus necessitating the installation of a string of 4¾-inch liner landed on bottom.

Rosecrans

Exeter Oil Co. got its first deep zone producer in the Rosecrans field when No. 4 Higgins was brought in flowing 1,250 bbls. of 31.9-gravity oil per day along with 750,000 feet of gas from the O'Dea zone at 7,665 feet. This new well which was drilled by Barnsdall Oil Co. was finished with 362 feet of 5¾-inch liner including 312 feet of perforated. The deal under which this well was carried into the deep zone anticipates the drilling of four wells on the Higgins and Wanka leases of Exeter with a possibility that a fifth well may be drilled depending on the location of a fault. Barnsdall will be reimbursed for drilling costs after which each company will share alike on future production. In accordance with curtailment the well will, in accordance with approval of Carl von Bibra, president of Exeter Oil Co., be beaned back to the prescribed allowable. Present plans call for the deepening of No. 3 Wanka from the upper to the lower zone and this well should result in good production. In addition to No. 3 Wanka, which is on a five-acre lease present plans call for the the drilling of another well on the five-acre Higgins lease with Barnsdall Oil Co. doing the actual work.

Universal Consolidated which recently staked locations for seven additional wells in the Rosecrans field has completed No. 5 Trust flowing 1,740 bbls. of 32.3-gravity oil and 850,000 feet of gas per day from the O'Dea zone at 7,861 feet and has spudded in one of the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original seven locations. This new well, the first large flowing well to be finished west of Figueroa Street was brought in flowing through a 48/64-inch bean but has since been reduced to the allowable maximum of 800 bbls. per day in accordance with the curtailment program for this field. Superior Oil Co. has completed No. 10 Maxwell in the southern end of the field flowing 691 bbls. of 31.4-gravity oil and 400,000 feet of gas per day from the O'Dea zone at 7,630 feet through a 32/64-inch bean. This well was finished with an 8⅝-inch water string landed at 7,526 feet and 123 feet of 6⅝-inch liner including 105 feet of perforated landed at 7,629 feet. Completion of these excellent wells has stimulated interest in deep zone exploitation with the result that Texas Co. has erected a rig for No. 3 Colby and Bankline Oil Co. has a derrick erected for No. 1 Bradford.

Wilmington

One good well and two small producers were completed in the Wilmington field of Los Angeles Basin. There are still about 16 wells drilling with approximately 50 locations available. Tideland development has not yet become an important factor. The largest well this week was Union Pacific Railroad Co. No. 90 offset completed flowing 4,344 bbls. of 27.4-gravity oil along with 400,000 feet of gas from the upper and lower Terminal zones with bottom at 3,968 feet. Southern California Petroleum Corp. No. 1 Long Beach was completed flowing 520 bbls. of 29.1 gravity from the Ford zone with bottom at 5,700 feet. General Petroleum Corp. No. 41 Harbor Community, a Ranger zone completion with bottom at 3,045 feet, has been completed flowing 30 bbls. of 16.7 gravity.

Los Angeles Basin

Sovereign Oil Co. completed two new wells in the El Segundo field but No. 1 Copinger was completed pumping 340 bbls. of 20.8 gravity from 7,350 feet and No. 2 Community pumping 303 bbls. of 20.9 gravity cutting 17 per cent from 7,331 feet. In the Dominguez field, Union Oil Co. completed No. 61 Callender flowing 15 bbls. per hour from 7,260 feet. It tanked 376 bbls. of 32.9 gravity during the first 24 hours. Shell Oil Co. No. 95 Reyes has been completed pumping 160 bbls. of 31.8 gravity from 9,110 feet but cutting 40 per cent. In the Huntington Beach field, D. D. Dunlap has recompleted his No. 2 H. B. flowing 430 bbls. of 25.8-gravity oil from 3,580 feet after the hole had been carried to 3,888 feet and then plugged back. Mar-Rico Oil Co. No. 1 O'Brien bottomed out beneath the tidelands has been recompleted flowing 634 bbls. of clean 23.4-gravity oil per day from 5,964 feet. H. K. R. Oil Co. has abandoned No. 1 in this field as a duster at 4,530 feet as the oil sand was wet and unproductive.

Other Completions

In the Round Mountain field of Kern County Honolulu Oil Corp. has completed well No. 58 in Section 20-28-29 pumping 118 bbls. of 18.5-gravity oil cutting 16 per cent from 2,052 feet. This cut may be bottom water as the hole was carried down to 2,132 feet and then plugged back to 2,052 feet. In the Kern River field Helm & Smith have completed well No. 7-A in Section 34-28-28 pumping 10 bbls. of 14.5-gravity oil cuting 1.5 per cent from 675 feet. The clean oil produced by this well is rather surprising as the oil zone in this field is rather well depleted and usually carried considerable water. In the Capitan field of Santa Barbara County, Shell Oil Co. completed No. 1-29 Covarrubias flowing 801 bbls. of clean 21.6-gravity oil and 84,000 feet of gas per day from the Vaqueros formation at 1,500 feet. In the Ventura Avenue field of Ventura County, Shell completed No. 31 Edison flowing 1,830 bbls. of 31.8-gravity oil cutting 2.4 per cent and 1,492,000 feet of gas per day from the 57 zone with bottom of the hole at 8,447 feet. In the Kettleman North Dome field, located in the San Joaquin Valley, Standard Oil Co. has completed No. 74-7-Q in Section 7-22-18 flowing 2,683 bbls. of 33.4-gravity oil, 5 bbls. of free water and 554,000 feet of gas per day from the Temblor with bottom of the hole at 8,895 feet.

Wildcat Exploration in Basin

Wildcat exploration is getting under way in Los Angeles Basin after several years of inactivity during which several excellent fields were discovered in the San Joaquin Valley and we may expect the starting of some additional work within a few months. Texas Co. is building rig for a wildcat in the Ocean Park-Santa Monica district in Los Angeles County and spud will be made within 10 days. This lease was taken several months ago but actual work has been delayed pending action by the city planning commission and Los Angeles city council which finally approved the location following several meetings of protest on the part of property owners. This location is the result of semiseismograph work carried on in conjunction with actual geological work in the field. The area has considerable merit and will bear watching during the course of work. Development of deep zone production in the Rosecrans field has brought this area back into the limelight again after several years of dormancy and has led to considerable leasing south and west of the present productive limits of the field. The present leasing campaign now practically completed is predicated on the assumption there is an excellent chance of a secondary accumulation west of the proved area reflecting the controlling action of a primary fault which is generally believed to exist in the district.

Western Gulf Oil Co. has secured a lease on 550 acres about 1 mile south and slightly east of the southern tip of the Rosecrans field and will have a derrick erected before the close of another few days. Western Gulf initial wildcat in this area will be located on the Helmer property near the corner of Rosecrans and McKinney boulevards. Practically every piece of acreage west of the Rosecrans field has been tied up for several months and early exploratory work is expected to get under way in the near future. Standard Oil Co. has the Ames-toy property and other large tracts under lease and the aggregate cash bonuses paid for these parcels sounds like the national debt. Present holders of this acreage were rather slow in getting into the area with the result that when they decided the district had considerable merit the royalties and cash bonuses required had risen almost out of sight. Nevertheless most of the present holders of leases found it advisable to secured acreage and were obliged to pay the almost prohibitive prices. This district is one of the hottest wildcat areas in the state at the present time although there is very litle acreage available as the belief that a field exists west of the main fault which runs from northwest to southeast appears rather well founded.

Other Wildcat Areas

The Montebello district of Los Angeles Basin will soon be the scene of two new wildcats as leasing activities southeast of the existing Montebello field as well as northeast of the proved area indicates early work. The wildcat to be started southeast of the field will be a joint undertaking of five operators who have blocked up a total of about 3,000 acres and subjected it to a seismograph survey. Location for the first test has not been decided but will be selected in the near future. Projected wildcat work northeast of the Montebello field has not yet progressed far enough to indicate the probable location of the first test as leasing activities have not yet been concluded. This district has not yet been subjected to a seismograph survey but appears to have considerable merit from a geological standpoint. Discovery of a new accumulation by D. & B. Oil Co. in the Harbor City area a few months ago has revised interest in the possibilities of Los Angeles Basin again after a period of indifference on the part of prospectors and present indications point to the probability that several additional wildcats will be started before the close of the current year.

Fresno County

Oil lease activities resulting from the discovery of substantial production at the southeast tip of the East Coalinga field by a joint well of Petroleum Securities Co., Honolulu Oil Corp. and Seaboard Oil Co. a few months ago has broadened the area susceptible of wildcat exploration. Following discovery of this field, General Petroleum Corp. leased 800 acres from Adolph M., Walter A. and Mary Domengine located about 15 miles northwesterly from the discovery well in the Gatchell area but has not made any move up to the present to drill a test. The Domengine lease is on the fringe of the foothills and is described as the south half of Section 16, the south half of Section 17 and the north half of Section 20 in Township 18, Range 15. The lease provides for a rental of 50 cents an acre after the third year if no well is started in the meantime. It also provides for a one-eighth royalty and offset wells for any producing well which may be drilled within 330 feet of the boundaries of the lease.

STANDARD OIL CO. OF CALIFORNIA AND UNION OIL CO.
Crude oil prices at the well effective June 22, 1936

Gravity—	Signal Hill (Long Beach)	Seal Beach	Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda-Brea Canyon	Athens-Rosecrans	Dominguez	Elwood Terrace	Torrance	Richfield	Whittier E. Coyote (La Habra)	Montebello	W. Coyote Hills	Santa Fe Springs	Mountain View	Elk Hills Buena Vista Hills Midway-Sunset Lakeview Area	Lost Hills	Coalinga	Wheeler Ridge	Kettleman Hills	Santa Paula*	Orcutt*
14-14.9	$.80	$.79	$.74	$.78	$.79	$.80	$.76	...	...	...	$.80	$.76	$.76	$.77	$.78	...	...	$.70	$.70	$.70	...	...	$.70	...
15-15.9	.80	.79	.74	.78	.79	.80	.76	...	...	...	.80	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.70	...
16-16.9	.80	.79	.74	.78	.79	.80	.76	...	...	...	.80	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.70	$.70
17-17.9	.80	.79	.74	.78	.81	.80	.76	...	...	...	.80	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.71	.70
18-18.9	.80	.79	.74	.78	.84	.80	.78	...	...	...	.82	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.73	.72
19-19.9	.82	.79	.74	.82	.87	.84	.81	...	...	...	.85	.76	.78	.77	.78	...	$.70	.74	.74	.71	$.70	...	.75	.74
20-20.9	.85	.79	.74	.85	.90	.88	.84	...	...	...	.88	.78	.82	.77	.80	...	.70	.78	.78	.72	.70	...	.77	.77
21-21.9	.88	.79	.74	.89	.93	.93	.88	...	...	...	.91	.80	.85	.77	.84	$.78	.73	.82	.82	.74	.70	...	.79	.80
22-22.9	.92	.82	.74	.92	.96	.98	.92	...	...	...	.93	.84	.89	.79	.88	.78	.77	.87	.86	.78	.72	...	.82	.83
23-23.9	.95	.86	.77	.96	.99	1.02	.96	$.84	$.79	...	.96	.88	.93	.82	.92	.78	.80	.92	.90	.82	.76	...	.85	.86
24-24.9	.99	.91	.80	1.00	1.02	1.06	.99	.88	.81	...	.99	.91	.96	.85	.96	.82	.84	.97	.94	.86	.79	...	.87	.88
25-25.9	1.03	.95	.82	1.03	1.05	1.11	1.03	.93	.83	...	1.02	.95	...	.89	.99	.86	.88	1.01	.98	.90	.83	...	.90	.91
26-26.9	1.06	1.00	.85	1.07	1.09	1.16	1.06	.98	.86	...	1.05	.98	...	.92	1.03	.90	.91	1.06	1.02	...	...	...	.92	.93
27-27.9	1.10	1.05	.88	1.11	1.12	...	1.10	1.03	.88	...	...	1.02	...	.96	1.06	.95	.95	1.10	1.06	...	...	...	.95	...
28-28.9	1.14	1.10	.90	1.14	1.15	...	1.14	1.07	.90	...	...	1.06	...	.99	1.10	.99	.99	1.15	1.10	...	...	...	.97	...
29-29.9	1.17	1.15	.93	1.18	1.18	F.O.B.	1.17	1.12	.93	...	...	1.09	...	1.03	1.14	1.03	1.02	1.20	1.14	...	...	...	.99	...
30-30.9	1.21	1.19	.95	1.22	1.21	our	1.21	1.17	.95	F.O.B.	...	...	...	1.07	1.17	1.08	1.06	1.25	1.18	...	...	...	1.01	...
31-31.9	...	...	...	...	1.24	Pipe	1.24	1.22	.97	Ship	...	...	...	1.11	1.21	1.12	1.09	1.29	...	...	...	...	...	...
32-32.9	...	...	...	...	1.27	Line	1.27	1.27	1.00	...	...	...	...	1.14	1.25	1.16	1.13	1.34	...	...	...	...	...	...
33-33.9	...	...	...	...	...	...	...	1.32	....	1.28	...	...	...	1.18	1.28	1.20	1.17	1.38	...	...	...	$1.19	...	...
34-34.9	...	...	...	...	...	...	...	1.37	....	1.32	...	...	...	1.22	1.32	1.25	1.20	...	...	...	...	1.23	...	...
35-35.9	...	...	...	...	...	...	...	1.42	....	1.35	...	...	...	1.25	...	1.29	...	...	...	...	...	1.27	...	...
36-36.9	...	...	...	...	...	...	...	1.46	....	1.39	...	...	...	1.29	...	1.33	...	...	...	...	...	1.31	...	...
37-37.9	...	...	...	...	...	...	...	1.51	....	1.43	...	...	...	1.32	...	1.37	...	...	...	...	...	1.35	...	...
38-38.9	...	...	...	...	...	...	...	1.56	....	...	...	...	...	1.36	...	1.42	...	...	...	...	...	1.39	...	...
39-39.9	...	...	...	...	...	...	...	1.61	....	...	...	...	...	1.40	...	...	...	...	...	...	...	1.43	...	...
40-40.9	...	...	...	...	...	...	...	1.66	....	...	...	...	...	1.43	...	...	...	...	...	...	...	...	...	...

Newhall, McKittrick, Kern River, Kern Front and Round Mountain, 70 cents for all grades. *Posted by Union Oil Co. Same company's Brea Canyon schedule stops at $1.14 for 28 degrees and over, and Belridge and Lost Hills schedule stops at $1.32 for 37 degrees and over. By Standard Oil Co., effective October 15: El Segundo, 14 to 18.9 degrees, 80 cents; 18-18.9, 82 cents; 20-20.9, 85 cents; 21-21.9, 88 cents; 22-22.9, 92 cents; 23-23.9, 95 cents; 24-24.9, 99 cents; 25-25.9, $1.03; 26-26.9, $1.06; 27-27.9, $1.10; 28-28.9, $1.14; 29-29.9, $1.17; 30-30.9, $1.21. Wilmington, 14 to 16.9, 75 cents; 17-17.9, 77 cents; 18-18.9, 79 cents; from 19 degrees upward, prices same as Signal Hill.

Kansas Developments

By
DAL DALRYMPLE

49 New Pools in 9 Months, But 10 Have No Pipe Lines

Wildcatting activity in Kansas has reached a most significantly low figure with only 46 operations under way as the week ended, the lowest plane wildcatting has seen in many months. The cause of this is that already 10 pools in western Kansas are without an outlet for their production and it is unlikely that new lines will be laid to outpost areas should they be proven for production at this time. A vast territory remains to be explored in the state and will be ultimately, but with pipe line companies already taxed and some reducing nominations for crude takings, it is unlikely that wildcatting will take a spurt in activity for some time.

Other things being equal, certainly Kansas ranks as one of the most favorable oil-producing states in percentage of wildcat successes with 49 new pools discovered thus far in 1938 out of a total of 222 wells drilled—better than 22 per cent of successes. This amounts to a finding rate of better than one and one-fourth new pools each week. The average initial potential of the wildcat discovery wells has been slightly less than 1,000 bbls. each.

Estimated Daily Production

Estimated daily production for Kansas for the week ending September 24, and for the preceding week, was as follows:

	Barrels	
	Sept. 24	Sept. 17
Oxford City	1,175	1,200
Burrton	9,550	9,525
Ritz-Canton	4,225	4,375
Graber	3,100	3,300
Hollow-Nikkel	3,100	3,050
Lerado	1,050	875
Voshell	1,975	1,950
Wellington	2,650	2,725
Ellsworth County:		
Lorraine	2,325	1,800
Other pools	1,045	1,335
Rice-Barton counties:		
Bloomer	1,875	3,375
Chase	4,100	4,150
Geneseo	2,950	4,175
Raymond	775	1,200
Silica	12,300	11,350
South Silica	2,275	1,875
Keesling	850	650
Wherry	3,575	3,700
Miscellaneous Barton	5,785	6,570
Miscellaneous Rice	4,150	3,465
Russell County:		
Fairport	1,950	1,980
Gorham	1,510	1,605
Russell	1,080	1,130
Sullivan	4,390	5,085
Trapp	7,980	8,210
Miscellaneous Russell	5,605	7,905
Sedgwick County:		
Valley Center	930	950
Miscellaneous	3,000	2,980
Ellis County:		
Bemis	5,225	5,500
Miscellaneous	2,435	3,290
Kingman County	605	610
Stafford County	4,465	4,230
Greenwood County	9,125	9,300
Butler County	17,425	18,150
Other fields	26,570	25,480
Total Kansas	161,125	167,050

The past week came through with its share with the opening of a new pool in Ford County and one in Woodson County. Sinclair Prairie No. 1 Francis Young, 440 feet north and 1,320 feet east of the center of Section 34-27-21w, Ford County, was completed for around 125 bbls. of oil and 40 bbls. of water, the well actually flowing 42 bbls. of oil in eight hours from the Mississippi lime with the pay logged at 4,922 feet. The test had failed to find production in the Viola, Simpson, and Wilcox and was plugged back from a total depth of 5,930 feet to 5,037 feet, in the Mississippi lime, where it was acidized with 1,400 gallons and completed, making it Ford County's first producer.

In the eastern half of the state Ward McGinnis and others' No. 3 Smith-Jobes, wildcat in the NW NE NE Section 10-24-13e, Woodson County, 2 miles west of the Winterscheid pool and 2½ miles east of the town of Virgil, pumped 15 bbls. of oil in 24 hours from Mississippi lime pay at 1,662-65 feet, total depth, after acid treatment with 3,000 gallons. Upon completion of this well same operator moved one location north and staked location for No. 1 Dehlinger.

Kansas' most northwesterly drilling operation was abandoned. This was Power Oil Co. and Olson Oil Co. No. 1 Noel, C E half E half NE Section 12-4-21w, Norton County, at total depth of 3,801 feet in Arbuckle lime which proved to be water bearing.

Producers Oil Co. and others No. 1 Ham, SW SW NW Section 25-7-19w, Rooks County wildcat, has been abandoned at 1,800 feet with no important markers having been encountered.

Tide Water Associated Oil Co. No. 1 Stockli, NW NW NE Section 28-23-5e, Butler County wildcat north of the Hazlett pool, is dry and abandoned at 2,484 feet in Arbuckle lime.

In Sumner County, Hapenny No. 1 Evers, SE SE NE Section 27-31-2e, 2 miles west of Churchill pool, failed to uncover a new pool and was abandoned at 2,440 feet, total depth and top of the Kansas City lime, where it made 3 bbls. of water initially.

One mile south of the Lost Springs pool in Marion County, Harwood Oil Co. No. 1 Kaufman wildcat, NW NW SE Section 27-17-4e, encountered only a small show of oil in the Mississippi lime and the test is abandoned at 2,465 feet, total depth.

J. M. Edward's No. 1 Detrich, C NW SE Section 21-14-15e, along the southeastern border of the Forest City basin, a major geological province of northeastern Kansas, and 15 miles south of Topeka has been abandoned at 1,130 feet, total depth. The test had a small oil showing in Kansas City lime at 809 feet.

New wildcatting operations amounted to three tests being started, one each in Russell County, Cowley County, and Woodson County. In Russell County Yankey & Stearns were building rig in the NW SE NW of Section 7-15-13w for No. 1 Krug, 1 mile northwest of the Coralena pool. In Cowley County Earl Henderson was moving in material for No. 1 King, NE NE NE Section 22-31-4e. Joe Nathan and associates staked location for No. 1 Hassenpflug, NW NE NE Section 2-26-14e, Woodson County.

Stafford County

Important developments were taking place in two Stafford County areas during the past week. Republic Natural Gas Co. No. 1 Hart, NW SW SE Section 20-22-11w, one-half mile northeast of the Richardson pool, appeared favorable to extend that pool's productive limits when it bailed out at the rate of 1½ bbls. of oil per hour after acidizing the Arbuckle lime at total depth of 3,629 feet with 600 gallons. It was being acidized the second time with 1,100 gallons for another test of production.

Atlantic Refining Co. and associates were evidently opening some kind of a producer in their No. 1 Wise, Stafford County wildcat 4½ miles northwest of the St. John pool and located in the NW of Section 13-24-14w. A failure in the Arbuckle lime with total depth of 4,195 feet, operators plugged back to the Kansas City lime horizon which had previously shown possibilities, and 24 shots through the 5-inch casing from 3,812-21 feet resulted in the well blowing out. Cleaning out operation was under way according to the last report.

Pure Oil Co. No. 7 Krey, NW SE SE Section 14-24-11w, Zenith pool, Stafford County, was completed in Misener sand at total depth of 3,812 feet for a flowing potential of 2,023 bbls. of 42-degree gravity oil.

Stanolind Oil & Gas Co. completed No. 1 U. G. Ferris A, SE SE SE Section 15-24-11w, Zenith pool, for a pumping potential of 362 bbls. of oil in Viola lime at total depth of 3,831 feet. The Misener sand horizon, the predominating pay zone in the pool, was missing.

Stanolind Oil & Gas Co. and others' No. 5 W. C. Volker, NW NE NE Section 23-24-11w, Zenith pool, logged Misener sand from 3,809 to 3,832 feet, total depth, and the well flowed naturally 1,943 bbls. of oil for its completion gauge.

Water encroachment has caused a temporary abandonment of Magnolia No. 1 Gates, NE NE SW Section 34-21-13w, Gates pool, in Stafford County. Arbuckle lime yielded a small amount of oil initially but later began producing 6 bbls. of water per hour and the test is abandoned temporarily at a total depth of 3,770 feet.

Magnolia No. 1 Fischer Heirs, NW NE SW Section 36-21-13w, semiwildcat 1 mile southeast of the Gates pool in Stafford County, is abandoned at 3,877 feet in Arbuckle lime.

E. H. Moore, Inc., No. 5 O'Haver, NE SE SW Section 13-24-11w, Zenith pool, was the only new operation in Stafford County the past week. The bit was down to 510 feet.

Scott County

The Shallow Water pool in Scott County, Kansas most westerly commercial oil pool, has another producer added in Atlantic Refining Co. No. 3 Pyle, C E half SW Section 14-20-33w. The well was given a potential rating of 743 bbls. of oil upon its completion in Mississippi lime from 4,577 feet to 4,634 feet, total depth, after two acid treatments of 1,000 gallons each.

Ellis County

Darby Petroleum Co. No. 1 Jorgensen, SW NW SW Section 7-11s-17w, South Burnett pool in Ellis County, has been completed for an estimated 2,500 bbls. of oil daily in Arbuckle lime from 3,330-35 feet, total depth. The production came naturally.

The same company's No. 2 Jorgensen, NE NE SW Section 7-11s-17w, was completed on the pump for an estimated 2,500 bbls., production coming from Arbuckle lime with total depth at 3,442 feet.

Darby Petroleum Co. No. 1 Hadley A, NE SE SE Section 12-11s-18w, South Burnett pool in Ellis County, received an estimated 2,000 bbls. pumping potential and is completed at 3,334 feet, total depth in Arbuckle lime.

Cities Service Oil Co. completed its No. 3 Rumsey, NW NE SW Section 23-11s-17w, Bemis pool, for a pumping potential of 1,194 bbls. of oil at 3,373 feet, total depth in Arbuckle lime.

Shell Petroleum Corp. No. 10 Rumsey, 1,002 feet south and 979 feet west of the NE cor. NW Section 23-11s-17w, Bemis pool, found Arbuckle lime at 3,366 feet and at 3,383 feet, total depth, is a completion for 3,222 bbls. of oil after a 2,000-gallon acid treatment.

New work in Ellis County was confined to the Bemis pool. Cities Service Oil Co. No. 4 Rumsey, NE NE SW Section 23-11s-17w, had rotary material on the ground. Shell No. 14 Rumsey, SE NE NW Section 23-11s-17w, was a cellar.

Russell County

Russell continues to be the most active county in the state with 32 operations at the close of the week. Two oil wells were brought in and five new operations started during the week.

Lauck & Moncrief No. 1 Miller B, NW NE SW Section 29-13s-14w, Atherton pool, established a pumping potential of 687 bbls. of oil plus 10 per cent water after using 1,000 gallons of acid to erode the Arbuckle lime logged at 3,296-3,312 feet, total depth.

Derby Oil Co. No. 13 Solbach, SW SW NW Section 32-14s-14w, Big Creek pool, in Russell County, pumped 35 bbls. of oil and 300 bbls. of water in eight hours and was given a daily potential of 88 bbls. Production is coming from the Arbuckle lime with total depth at 3,165 feet.

The new activity in Russell County follows: Lauck & Moncrief No. 3 Miller A, SW SE NW Section 29-13s-14w, in the North Balta pool is a cellar. Mid-Continent

Petroleum Corp. No. 4 Letsch, SW SE NW Section 26-14-13w, Letsch pool, was building rotary rig. Sinclair Prairie Oil Co. No. 3 Rogg, SW SW SE Section 29-14-13w, West Letsch pool, is a location, and R. H. Sheidl No. 1 Owens, SE NE SW Section 34-14-13w, South Letsch pool, is building rig.

Rice County

In Rice County Continental Oil Co. No. 5 Wood, SE SW SE Section 12-18-8w, Geneseo pool, is a completion in the Arbuckle lime at total depth of 3,225 feet, establishing a pumping potential of 2,461 bbls. of oil in 24 hours.

Shell Petroleum Corp. No. 7 Zajic, NE SW NE Section 13-18-8w, Geneseo pool, is completed with a rated potential of 2,741 bbls. of oil from Arbuckle lime at a total depth of 3,218 feet. Upon drilling the cement plug after setting casing at 3,189 feet the hole filled 2,100 feet with oil in one and one-half hours, whereupon the lime was acidized with 2,000 gallons and completed for the above mentioned 2,741 bbls.

Cities Service Oil Co. completed No 1 Temple, NE NE SE Section 23-18-8w, when the Arbuckle lime topped at 3,281 feet and drilled to 3,296 feet, total depth, failed to yield anything but water. This dry hole is located one-half mile west of production in the Geneseo pool.

Continental Oil Co. and associates at No. 2 Pickerill A, NW NE SE Section 24-18-8w, Geneseo pool of Rice County, extended production one location east and is a completion at 3,214 feet, total depth in Arbuckle lime. It was rated a 2,300-bbl. producer and made its potential on the pump naturally

In an area that is gradually evidencing potentialities for gas production that will possibly surpass the Otis pool of Rush County, Atlantic Refining Co. and Sinclair Prairie Oil Co. have completed their No. 1 Pulliam B, 1,320 feet east and 990 feet north of the center of Section 35-19-8w, just beyond the city limits of the town of Lyons in Rice County, for 51,000,000 feet of gas. Production is coming from the Arbuckle lime at a total depth of 3,277 feet and is "sour" gas. The new producer is a south offset to the Simpson & Noble and others' No. 1 Pulliam completed in August, 1936, for an estimated 70,000,000 feet of gas from the same horizon. It is 1½ miles north of the Drillers Gas Co. No. 1 Lyon, located in Section 2-20-8w, completed in July this year for 35,000,000 feet, and 2¼ miles of Shell Petroleum Corp. No. 1 Maughlin in Section 11-20-8w, which encountered a volume of gas estimated around 36,500,000 feet, later to be abandoned on account of tools lost in the hole.

Sam Schneider and ohers No. 1 Fair, C NE Section 28-21-9w, 5 miles west of Sterling in Rice County, failed to develop either oil or gas production and is abandoned at 3,475 feet, total depth, in Simpson formation. A small show of oil was had at 3,474 feet but at 3,475 feet operators encountered a hole full of water. The well is three-eighths of a mile southwest of two gas wells.

The only new operation in Rice County for the week was Skelly Oil Co. No. 5 Volkland B, NW SE NW Section 5-18-10w, Habiger pool, which was building rotary rig.

Barton County

Phillips Petroleum Co. completed its No. 5 McClanahan, NW NW SE Section 7-16-13w, South Trapp pool in Barton County. Arbuckle lime was topped at 3,369 feet and 7-inch casing set at 3,369 feet. Upon being drilled to total depth of 3,379 feet and plugs drilled out, the well responded with a pumping potential of 99 bbls. of oil.

Shell Petroleum Corp. No. 3 Ehrlich A, 826 feet south and 829 feet west of the NE cor. NW Section 18-16-13w, South Trapp pool in Barton County, encountered water at 3,376 feet, total depth, in Arbuckle lime and the well plugged back to 3,373 feet where it responded with a pumping gauge of 473 bbls. of oil and 152 bbls. of water. It is a completion.

The same company's No. 3 Schneider A, NE NE SE Section 12-16-14w, South Trapp pool in Barton County, topped Arbuckle at 3,333 feet, ran and set 7-inch casing at 3,334 feet and upon drilling to a total depth of 3,348 feet established a pumping potential of 3,017 bbls. of oil with no water. The well was acidized with 2,000 gallons.

In the Ainsworth pool of Barton County, Stanolind Oil & Gas Co. No. 2 M. Deal, 440 feet south and 1,320 feet west of the NE cor. Section 35-16-13w, is completed in the Arbuckle lime at a total depth of 3,386 feet for 232 bbls. of oil and no water. It had been agitated with two shots of acid, 1,100 gallons and 2,000 gallons.

A peculiar subsurface condition evidently exists on the east side of the Kraft pool in Barton County since Phillips Petroleum Co. No. 3 Kroutwurst, NW NW SW Section 11-17-11w, failed to encounter any kind of a show, and stands as a dry hole at a total depth of 3,390 feet in Arbuckle lime. Although it offsets a dry hole to the west it is bounded on the northeast, south and west by production and appears on the surface as an inside location which would be figured to produce. This is the third test drilled on the farm and the third dry hole.

Magnolia Petroleum Co. No. 4 Mueller, 244 feet south and 330 feet west of the NE cor. Section 1-18-11w, southern tip of the Bloomer pool in Barton County, has been completed for 1,883 bbls. of oil in the Arbuckle lime at a total depth of 3,245 feet. The well extends production one location east and three offsets were immediately staked.

Stanolind Oil & Gas Co. No. 1 E. J. Grant, C NW SE Section 5-20-11w, Ellinwood pool in Barton County, has been completed as a dry hole at total depth of 3,340 feet in Arbuckle lime. The well made a meager effort toward commercial production by swabbing 10 gallons of oil per hour with 8 bbls. of water per hour on a 16-hour test.

New work started during the week in Barton County follows: Stanolind Oil & Gas Co. No. 3 Charles Rose, 440 feet north and 1,320 feet east of C Section 3-20-11w, Silica pool, had 10-inch casing cementing at 215 feet; Shell Petroleum Corp. No. 8 Schneider B, SE NW NW Section 1-16-14w, Trapp pool, was a location; same company's No. 3 Hoffman B, SE SE NE Section 12-16-14w, Trapp pool, a location; same company's No. 1 Putnam, SE SE SW Section 3-17-13w, Ainsworth pool, was running surface pipe and Western Kansas Oil & Refining Co. No. 3 Linsner, SE SW SE Section 3-17s-13w, Ainsworth pool, was drilling at 800 feet.

Barber County

The Medicine Lodge gas field of Barber County, southwestern Kansas, was extended one location northwest when Barbara Oil Co. No. 1 U. L. Thompson B, C SW SE Section 16-33-13w, drilled in the big pay in Mississippi lime at 4,590-4,630 feet, total depth, which yielded 35,000,000 feet of gas initially.

Rooks County

L. E. Dean No. 2 Westhusin, 1,320 feet south and 330 feet west of the NE cor. Section 11-9-17w, Westhusin pool of east central Rooks County, has been abandoned at the shallow depth of 500 feet.

McPherson County

George Dickey No. 1 Matthews, NE NW SW Section 24-19-3w, has extended production in the Chindberg pool in McPherson County, one-quarter mile west by pumping 464 bbls. of oil on its potential gauge. Production is coming from the Mississippi "chat" with total depth at 2,986 feet. Four thousand gallons of acid were used in the well upon completion.

Two new locations were immediately staked offsetting the above mentioned producer. To the north Dickey Oil Co. No. 1 Carlson, SE SW NW Section 24-19-3w, was digging cellar and Pryor & Lockhart No. 2 Bixby, NW NE SW Section 24-19-3w, the east offset, was also a cellar.

Cowley County

One of the largest producing oil wells in many weeks was brought in in the Weathered pool of Cowley County during the week. Lloyd, Frost, Study Oil Corp. No. 5 J. T. Wilson, SW SE SW Section 33-31-3e, logged Arbuckle lime at 3,205 feet, drilling same to 3,226½ feet, total depth, wherewith upon acid treatment with 1,000 gallons the well flowed 1,050 bbls. of oil the first four hours and 994 bbls. the second four hours to establish a 24-hour potential of 5,964 bbls. of oil.

The Texas Co. No. 1 I. A. Wilson, NE SE NW Section 4-32-3e, extended production one location south in this very prolific pool, the Weathered pool, when it pumped 283 bbls. of oil the first four hours and 278 bbls. the second four hours to be rated at 1,670 bbls. daily. Pay was encountered in the Arbuckle at 3,232-50 feet, total depth.

Two new locations were made in Cowley County the past week, both being in the Weathered pool. Texas Co. No. 2 Beeman, SE SW SW Section 33-31-3e, and the same company's No. 2 Wilson, NW SE NW Section 4-32-3e.

Butler County

Reiss & Hedrick No. 1 Sawyer-Farner, NW SW SW Section 2-28-7e, North Brandt pool in Butler County, a location since last July, has been abandoned. Republic Natural Gas Co. has abandoned location for its No. 1 Sawyer, NE SE NE Section 10-28-7e, North Brandt pool in Butler County. Adair & Martin No. 1 Ramp, SW NW SW Section 14-28-7e, Brandt pool, was the only new operation started the past week in Butler County. Materials were being moved to location.

Greenwood County

I. Katz Oil Co. No. 5 Christy, 330 feet north and 660 feet east of the SW cor. SE Section 12-26-9e, has been completed at a plugged back depth of 2,122 feet for 21 bbls. of oil in 24 hours on the pump. Water was encountered at total depth of 2,124 feet and the well plugged back to be completed in the Mississippi lime pay from 2,090-2,122 feet. Moffet and others No. 1-A Life, NE SE SW Section 13-26-9e, Greenwood County, has been abandoned at a depth of 470 feet with no formation tops reported.

Greenwood County new work follows: Hennesey and others No. 2-A Trapp, 990 feet north and 1,320 feet west of the SE cor. NE Section 23-26-9e, shut down at 1,105 feet; Ward McGinnis No. 1 Dehlinger, SW SE SE Section 3-24-13e, cleaning out at 1,653 feet in Mississippi lime; Charles Christy No. 3 Pusey, 600 feet north and 720 feet east of SW cor. SE Section 31-24-13e, Bartlesville sand 1,534-64 feet, total depth, good show oil.

Woodson County

Cities Service Oil Co. No. 4 Bahr, C E half NE NW Section 23-23-13e, North Virgil pool, Woodson County, logged Arbuckle lime at 2,181 feet, encountered first oil at 2,181-83 feet, at 2,184 feet, total depth, stands as a completion for 39 bbls. of oil and 150 bbls. of water.

B. & B. Oil Co. No. 4 Corkery, 200 feet south and 200 feet east of the NW cor. Section 29-25-14e, Quincy pool, Woodson County, pumped 25 bbls. of oil in 24 hours from Bartlesville sand encountered from 1,397-1,428 feet, total depth.

Woodson Pipe Line & Producing Co. No. 2 Campbell, CNL NW NE Section 7-24-14e, drilling 470 feet is Woodson County's only new operation.

Miscellaneous New Work

National Refining Co. No. 1 Lambe, NE NE SE Section 4-27-2e, North Eastboro pool, in Sedgwick County is building rig; Skelly Oil Co. is moving in material for its No. 2 C. J. Moore located 440 feet north and 1,320 feet east of the SE cor. Section 25-27-11w, Cunningham pool in Pratt County; Transwestern Oil Co. and others No. 1 Daugherty, SE SE NE Section 32-17-10w, Stumps pool in Ellsworth County is building rotary rig; Magnolia Petroleum Co. is rigging up to deepen its No. 8 Wheeler and others, SE NE NE Section 19-27-2e, Eastboro pool in Sedgwick County and Olson Oil Co. and Shell Petroleum Corp. are jointly rigging up to deepen from the Hunton lime their No. 4 Downie, NW NW NE Section 14-23-4w, Burrton pool, Reno County.

Four Wells Have Been Started In Three Arizona Counties

PHOENIX, Ariz., Sept. 26.—Reports received by the State Land Department show records of four drilling wells in Arizona in search for oil or gas or both. They are in Yavapai, Cochise and Maricopa counties. Several new operations are scheduled to commence within the next 30 days, one being in Yuma County and another in the southeastern part of Pima County, but no details are available at this time on these proposed operations. The State Land Department estimates that within the past year applications have been filed for oil and gas leases on over 350,000 acres in the state.

Following is the status of the four drilling wells:

Chino Valley Oil Development Co. No. 1 State, Section 20-18n-2w, Yavapai County, depth about 600 feet, carrying 15½-inch hole, bottom in hard limestone.

Ari-Copa Drilling & Mining Co., Section 27-18n-2w, Yavapai County, is rigging up.

Funk Benevolent Corp. No. 1 fee, SE NE Section 27-13s-30e, Cochise County, near the village of San Simon, depth 6,434 feet, calcareous conglomerate. At tempting water shut-off before testing oil and gas shows. This well is also interesting because of the high temperature recorded in the bottom of the hole. In readings made early in the summer, temperature of 274° F. was recorded.

L. F. Newcom No. 1 Langley, Section 30-2n-4e, Maricopa County. This well, which is located in the outskirts of Phoenix, is now at about 1,000 feet in depth, in sand and is shut down waiting for casing with the expectation of testing good shows of oil and gas.

Rocky Mountain Area

By T. R. INGRAM

Plymouth Test, Denver Basin, Has Reached Critical Depth

DENVER, Colo., Sept. 26.—A shallow wildcat in Huerfano County, Colorado, which shot oil over a 30-foot mast at 412 feet for a short period proved to have struck a small pocket, and the oil and gas soon were exhausted. Plymouth Oil Co. test in the Denver basin is reaching critical depth and officials have arrived to watch results.

The Sinclair-Wyoming Oil Co. No. 3 Mahoney, Carbon County, Wyoming, second Tensleep well on Mahoney dome, swabbed at the rate of 56 bbls. in 24 hours. The Continental Oil Co. No. 1 Northern Pacific, which extends the proven area of the Frannie field one-fourth of a mile to the west, swabbed 203 bbls. in 8½ hours. Bock & Jackson No. 2, Osage field, pumped 110 bbls. the first 24 hours at 228 feet. Wyoming had three new operations, a wildcat in Big Horn County, a Minnelusa sand well for the Ohio Oil Co. in Lance Creek and one in the Osage field.

One well was completed in Cut Bank, Montana, and H. C. Rowland's test in Flatwillow was abandoned. He will drill another. J. W. Perron No. 2 Hugi, in Kevin-Sunburst, flowed for two hours and looks like a good well.

NEW MEXICO

New Mexico had no unusual completions in the past week. Lee County's 11 new wells averaged lower than usual in initial output as will be seen by a perusal of the following list of wells finished in that county:

Great Western Production Co. No. 1 Leonard, C SE NE Section 32-23s-37e, topped pay at 3,560 feet, total depth 3,615 feet, and flowed 40 bbls. per day through one-half inch choke on 2-inch tubing, with 250,000 feet of gas.

Humble Oil & Refining Co. No. 6 Fopeano, C NE NE Section 35-20s-36e, total depth 3,850 feet, topped pay at 3.770 feet, and flowed 39 bbls. of oil per day, with 864,000 feet of gas.

Shell Petroleum Corp. No. 1-G State, C SE SE Section 22-17s-34e, had top of pay at 4,605 feet, total depth 4,765 feet. This well tested 91 bbls. of fluid on a 24-hour test, and now making 55 bbls. of oil per day.

Shell Petroleum Corp. No. 4-H State, C W half NE SE Section 13-21s-35e, topped pay at 3,840 feet, total depth 3,907 feet. In an 11-hour test it flowed 154 bbls. through open 2-inch at 3,900 feet. Gas was gauged at the rate of 500,000 feet per day.

Shell Petroleum Corp. No. 1 Swigart, C NE SE Section 25-17s-34e, had top of pay at 4,425 feet, total depth 4,700 feet, and flowed 148 bbls. of 37.7-gravity oil in a six-hour test through open 2-inch tubing. Gas flow was 550,000 feet per day.

Southern Petroleum Exploration Co. No. 4 Annie Downes, C NW SW Section 32-21s-37e, topped pay at 3,714 feet and tested 97 bbls. in 14 hours. Total depth was 3,780 feet.

Texas Co. No. 15 Lieu Lands, C SW NE Section 20-20s-37e, top of pay 3,700 feet, total depth 3,850 feet, tested 211 bbls. in 24 hours through three-quarters inch choke on 2-inch tubing.

Texas Co. No. 1-S State, C NW SW Section 35-17s-34e, total depth 4,675 feet, had top of the pay at 4,480 feet and flowed 10 bbls. per hour for 12 hours, with gas at the rate of 208,000 feet per day.

Tide Water Associated Oil Co. No. 1-L State, C NE NW Section 23-12s-36e, was dry and abandoned at 5,294 feet. The well had been plugged back to 3,240 feet and shot, but there was no oil.

Twin Oil Corp. No. 2 Corrigan, C NE NE Section 4-22s-37e, topped pay at 3,568 feet, total depth 3,743 feet, and flowed 120 bbls. on a four-hour test. Gas was gauged at 400,000 feet per day.

Two States Oil Co. and Kaseman No. 2-A Hill, C SE SW Section 31-20s-38e, total depth 3,735 feet, had top of the pay at 3,730 feet and flowed 9½ bbls. in a six-hour test, with 300,000 feet of gas.

In Eddy County, Western Drilling Co. completed No. 2-A Western, SE SE NW Section 23-17s-29e, at a total depth of 3,040 feet, top of pay 2,702 feet. Initial production was 25 bbls. per day through open 2-inch tubing.

Neil H. Wills No. 2 Colglazier, SW SW NE Section 20-20s-30e, was completed and pumped 6 bbls. per day from total depth of 1,436 feet, top of pay 1,434 feet.

Lea County

Anderson & Prichard No. 2 Stuart, SW SW NW Sec. 11-25-37. T.D. 3,430 ft.; F. 5 B.O.P.H.; shot and F. 25 B.O.P.H.; est. 1,000,000 ft. gas.
Anderson & Prichard No. 3 Wells, C NE NW Sec. 5-25-37. T.D. 3,567 ft.; F. 7 B.O.P.H. and gauged 13,500,000 ft. gas.
Cities Service No. 1-K State, C SW NE Sec. 27-17-35. T.D. 3,030 ft.; S.D. for wtr.
Continental Oil Co. No. 1 Hawk B-6, NW NW SE Sec. 6-21-37. Loc.
Continental Oil Co. No. 1-B-1 Lockhart, C SW NW Sec. 1-22-36. W.O.C. 3,740 ft.
Continental Oil Co. No. 7 Reed B-23, NE NW SE Sec. 23-20-36. W.O.C. 254 ft.
Continental Oil Co. No. 1 State 1-7, NE NW NE Sec. 7-17-34. T.D. 4,895 ft.; acidized twice; est. 10 B.O.P.D.
Continental Oil Co. No. 2 State H-35, C NE NE Sec. 35-17-34. Spud.
Continental Oil Co. No. 2-J-2 State, C NE SE Sec. 2-22-36. T.D. 3,840 ft.; F. 206 B.O. in 1 hr. and 3,300,000 ft. gas.
Walter Donnelly No. 1 Davis, C SE NW Sec. 33-23-37. T.D. 3,600 ft.; swb. dry and shot; now flwg., no gauge.
Emperor Oil Co. No. 1 Humble-State, C SE SW Sec. 36-20-35. W.O.C. 2,035 ft.
Gulf Oil Corp. No. 1 Alley, C NE SE Sec. 10-23-37. T.D. 3,715 ft.; P.B. 3,686 ft.; S.I.
Gulf Oil Corp. No. 2-D Arnott-Ramsey, C NE NE Sec. 33-21-36. W.O.C. 40 ft.
Gulf Oil Corp. No. 6 McCormack, C NW SE Sec. 32-21-37. Drlg. 2,795 ft.
Gulf Oil Corp. No. 1-B White, C SE SE Sec. 35-20-36. O.W.D.D.; O.T.D. 3,860 ft.; P.B. to 3,857 ft.; tstg.
Helmerich & Payne and Continental Oil Co. No. 1-G-36 State, C NW SW Sec. 36-17-35. T.D. 4,920 ft.; drlg. plug at 4,860 ft.
Humble O. & R. Co. No. 3 Greenwood, C SW SW Sec. 9-22-37. Drk.
Humble O. & R. Co. No. 1-J State, C SW SW Sec. 19-17-35. Drlg. 4,305 ft.
Magnolia Pet. Co. No. 2 Hardy, NW NW NW Sec. 29-21-37. T.D. 1,220 ft.; W.O.C.
Magnolia Pet. Co. No. 2-L State, C SW SW Sec. 21-17-35. Drlg. 3,970 ft.
Magnolia Pet. Corp. No. 1-M State, C NE NW Sec. 34-17-35. Drlg. 1,507 ft.
Magnolia Pet. Co. No. 13 State-Bridges, C SW NW Sec. 25-17-34. T.D. 4,763 ft.; C.O. at 4.485 ft.
Magnolia Pet. Co. No. 14 State-Bridges, C SW NE Sec. 25-17-34. T.D. 4,720 ft.; tstg.
Magnolia Pet. Corp. No. 16 State-Bridges, C NW NE Sec. 25-17-34. Drlg. 2,420 ft.
Magnolia Pet. Co. No. 17 State-Bridges, C NE NE Sec. 25-17-34. W.O.C. 843 ft.
Maljamar O. & G. Co. No. 10 Baish, C SW NW Sec. 22-17-32. T.D. 4,110 ft.; S.I.
Maljamar O. & G. Co. No. 11 Baish, C NW NW Sec. 22-17-32. T.D. 4,104 ft.; 3,000 ft. O.I.H. in 18 hrs.; tstg.
Maljamar O. & G. Co. No. 12 Baish, C NE NW Sec. 22-17-32. Drk.
Maljamar O. & G. Co. No. 1-B State, C SW SE Sec. 16-17-32. T.D. 3,660 ft. cmtg.
Jas. A. Mascho No. 2 Cloyd, C SW SW Sec. 20-22-33. T.D. 538 ft.; sd.; S.S.O.; S.D.O.
John Menke No. 1 Alexander, C NW NW Sec. 5-21-37. T.D. 3,791 ft.; F. 7 B.O.P.H. for 10 hrs.; died; est. 50,000 ft. gas.
Ohio Oil Co. No. 1 State-Warn, C NW NW Sec. 6-18-35. T.D. 4,110 ft.; cmtg.
Ohio Oil Co. No. 1 State-Bridges, C NE NE Sec. 20-17-34. Cg. 4,673 ft.
Ohio Oil Co. No. 1 Walden, C NE NE Sec. 21-22-37. O.W.D.D.; O.T.D. 3,636 ft.; T.D. 3,672 ft.; swb. 60 B.O.P.D.
Ohio Oil Co. No. 1 Wills, C NE NW Sec. 35-26-37. Drlg. 750 ft.
Olean Pet. Co. No. 1 Boyd, C NW SW Sec. 23-22-37. T.D. 3,694 ft.; S.S.O.
Olean Pet. Co. No. 1 Brunson, SW SE SE Sec. 4-22-37. R.U. mach.
Olean Pet. Co. No. 1 Ferrell, C NE SE Sec. 22-22-37. Drlg. 3,536 ft.; sd.
Parker Drlg. Co. No. 1-A State, C SW SW Sec. 21-22-37. Drlg. 3,585 ft.
Lem Peters No. 1 Coll, NW SW SW Sec. 26-22-37. T.D. 3,680 ft.; O.I.H.
Lem Peters No. 4 L. J. May, SW SE NE Sec. 27-22-37. Drlg. 3,125 ft.
Lem Peters No. 2 T. O. May, NW NE NE Sec. 34-22-37. T.D. 1,145 ft.; S.D. for tools.
Phillips Pet. Co. No. 3 Santa Fe, C SW NW Sec. 5-18-35. Drlg. 3,964 ft.
Phillips Pet. Co. No. 10 Santa Fe, C NE NW Sec. 24-17-34. Drlg. 1,415 ft.
Phillips Pet. Co. No. 11 Santa Fe, C NE SW Sec. 26-17-35. Drlg. 2,106 ft.
Phillips & Pure No. 3 Woolworth, C E½ SE SE Sec. 33-24-37. Drlg. 3,430 ft.
Schermerhorn Oil Co. No. 1 Woolworth, C NW NE Sec. 28-24-37. O.W.D.D.; O.T.D. 3,477 ft.; to D.D.
Shasta Oil Co. No. 3 Woolworth, NE SE NW Sec. 28-24-37. Loc.
Shell Pet. Corp. No. 4-A State, C NE NE Sec. 31-17-35. C.&P.
Shell Pet. Corp. No. 1-E State, C SE SW Sec. 31-17-35. Drlg. 4,660 ft.
Shell Pet. Corp. No. 1-F State, C SW SW Sec. 29-17-35. Drlg. 3,420 ft.
Shell Pet. Corp. No. 1-H State, C NW SW Sec. 29-17-35. Drlg. 270 ft.
Shell Pet. Corp. No. 1-I State, C SW NW Sec. 29-17-35. Rng. csg. 1,658 ft.
Shell Pet. Corp. No. 1-N State, NE NE SE Sec. 24-21-35. Drk.
Shell Pet. Corp. No. 1-S State, C NE SE Sec. 21-17-35. Drlg. 3,840 ft.
Shell Pet. Corp. No. 1-U State, C NE NW Sec. 3-18-35. Rng. csg. 1,720 ft.
Skelly Oil Co. No. 1 Baker, C SW SW Sec. 10-22-37. Drlg. 1,810 ft.
Skelly Oil Co. No. 6 Baker, C SW NE Sec. 27-22-37. T.D. 3,660 ft.; swb. 71 B.O. in 24 hrs.; shot and F. 150 B.O. P.D. while C.O.; 1,000,000 ft. gas.
Skelly Oil Co. No. 1-B King, C NE SW Sec. 33-22-37. Drlg. 2,860 ft.
Skelly Oil Co. No. 1-M State, C SW SW Sec. 32-24-37. T.D. 3,507 ft.; F. 57 B.O. in 19 hrs.
Stanolind O. & G. Co. No. 5-B Langlie, C SE SE Sec. 9-25-37. Drlg. 3,462 ft.
Skelly Oil Co. No. 1 Simms, O.W.D., C NW SE Sec. 3-23-37. O.T.D. 3,594 ft.; drlg. 3,615 ft.
Stanolind O. & G. Co. No. 26 Thorpe, C SE NW Sec. 10-19-38. O.W.D.D.; O.T.D. 4,185 ft.; drlg. 4,188 ft.
Stanolind O. & G. Co. No. 8 Terry, C NW SE Sec. 9-19-38. O.W.D.D.; OT.D. 4,186 ft.; T.D. 4,200 ft.; tstg.
Standard Oil Co. of Texas No. 1 State, C SW NW Sec. 32-17-35. T.D. 4,705 ft.; waiting pump.
Standard of Texas No. 1 State Lease No. 4, C NE SW Sec. 27-17-35. Drlg. 3,142 ft.; 800,000 ft. gas.
Standard Oil Co. of Texas No. 1 State, Lease 5, C NW NW Sec. 27-17-35. C.&P.
Texas Co. No. 3 Black, C NW NE Sec. 21-24-37. T.D. 3,600 ft.; P.B. 3,495 ft.; F. 97 B.O. in 17 hrs.; tstg.
Texas Co. No. 4 Black, C SE NW Sec. 21-24-37. C.&P.
Texas Co. No. 5 Fristoe, NW SE SE Sec. 3-25-37. T.D. 3,218 ft.; cmtg.
Texas Co. No. 2 Fanning, C NW NE Sec. 4-26-37. Drlg. 3,265 ft.
Texas Co. No. 1 Lodewick, C SW SE Sec. 34-18-33. Drk.
Texas Co. No. 2-D State, C SW NW Sec. 27-17-34. T.D. 4,860 ft.; waiting gauge.
Texas Co. No. 1-N State, C SW SW Sec. 30-17-35. T.D. 4,850 ft.; P.B. 4,689 ft.; swb. 60 B.O. and F. salt wtr.; S.I. to cement off wtr.
Texas Co. No. 3-Q State, C NW SE Sec. 25-17-34. T.D. 4,725 ft.; acdz. and F. 25 B.O. every other day; to P.O. gas lift.
Texas Co. No. 7-O State, C SE SE Sec. 36-17-34. Cmtg. at 4,110 ft.
Texas Co. No. 8-O State, C SW SW Sec. 36-17-34. Drlg. 3,955 ft.
Texas Pacific C. & O. Co. No. 6-A State, SW SE NW Sec. 21-23-26. Drlg. 3,220 ft.
Twin Oil Co. No. 1 Hare, C SE SW Sec. 33-21-37. Drlg. 1,600 ft.
Twin Oil Co. No. 2 Hare, C NW SW Sec. 33-21-37. Drlg. 188 ft.
Twin Oil Co. No. 1 Joyce-Pruitt, C SE SE Sec. 31-21-37. T.D. 3,771 ft.; C.O.
Two States Oil Co. No. 3-B Cole, C SE NE Sec. 16-22-37. Drk.
Weiner et al No. 2 Smith, NW SE NE Sec. 4-25-37. T.D. 3,055 ft.; fsg.
Sam Weiner No. 1 Woolworth, SE NE SW Sec. 33-24-37. Drlg. 160 ft.
Westmount Oil Co. No. 1 State, C SE NW Sec. 30-17-35. T.D. 1,608 ft.; W.O.C.
Francis C. Wilson No. 1 State, C SW NE Sec. 7-21-35. Drlg. 3,565 ft.

Eddy County

Adkinson Oil Co. No. 1 Brainard, SE SW SE Sec. 5-18-27. Loc.
F. E. Baker No. 1 Eddy, NE Sec. 12-22-27. T.D. 2,510 ft.; S.D.O.
Carper Drlg. Co. No. 1 Day, NE NE NE Sec. 3-19-21. T.D. 2,748 ft.; swb. 70-80 B.F.P.D., 20% wtr.; S.I.
Carper Drlg. Co. No. 3 Robinson, SW SW SE Sec. 25-16-31. R.U. and S.D.
B. Cockburn No. 1 State, C SW NE Sec. 16-18-31. Drlg. 1,020 ft.
Danciger O. & R. Co. No. 1-B Turner, CEL NE SE Sec. 17-17-31. Drlg. 2,295 ft.; S.S.O.&G.
D. & B. Oil Co. No. 3-A Berry, NW SW NW Sec. 21-17-30. T.D. 2,878 ft.; rng. csg.
Dominion O. & G. Co. No. 2 Johnson, C SE NE Sec. 35-16-31. T.D. 3,932 ft.; on bttm.
Dominion O. & G. Co. No. 3 Johnson, C NE SW Sec. 35-16-31. Drlg. 3,010 ft.
English & Harmon No. 1 Dougherty, NE NE SW Sec. 3-17-27. T.D. 2,319 ft.; gauged 1,000,000 ft. gas; tstg.
Etz Bros. No. 5 State, SE NE SE Sec. 16-17-30. Drlg. 1,400 ft.
Franklin Pet. Corp. No. 1 McIntyre, NW NE SE Sec. 20-17-30. T.D. 2,748 ft.; S.D.O.
Fullerton Oil Co. No. 1-A Johnson, C SE NW Sec. 35-16-31. T.D. 3,871 ft.; C.O. to 3,845 ft.; F. 72 B.O. in 2 hrs. of accumulated oil.

Fullerton Oil Co. No. 2-A Johnson, C NW SE Sec. 35-16-31. Drlg. 3,082 ft.
Fullerton Oil Co. No. 1-A Little, C NE NE Sec. 28-18-31. Drlg. 3,388 ft.
C. F. Ingram No. 1 Page, NE NE SW Sec. 15-21-28. T.D. 2,483 ft.; S.D.R.
F. G. Keys No. 2 State, C SE NE Sec. 9-17-28. T.D. 1,725 ft.; F. 50 B.O.P.D. while C.O.
Harry Leonard No. 1 Texas, NW NW NE Sec. 36-16-31. T.D. 4,009 ft.; F. 80 B.O.P.D. while C.O.
Martin-Yates No. 1 Bowers, SW SE SE Sec. 31-19-27. Drlg. 460 ft. L.; O.I.H.
New Mexico Eastern Gas Co. No. 2 Stephens, SE SE NE Sec. 20-17-38. Loc.
Paton Bros. No. 1 Erwin, C SW SW Sec. 9-18-31. Cellar.
Premier Pet. Co. No. 1 Maddren-Beeson, NE SW SE Sec. 28-17-30. Drlg. 2,520 ft.
Repollo Oil Co. No. 3 Beeson, SE NE SE Sec. 28-17-30. T.D. 3,268 ft.; swb. 65 B.O. in 8 hrs.; shot at 3,207 ft. and swb. 146 B.O. in 24 hrs.; tstg.
Martin Yates, Jr., No. 1 Bowers, SW SE SE Sec. 31-19-27. Drlg. 8226 ft.
Yates-Dooley No. 1 Creek, C SW NE Sec. 35-18-30. Drlg. 3,007 ft.

APPROVED

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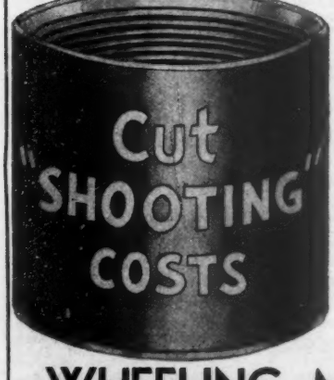

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BOILER TUBE O.D.	COUPLING O.D.	COUPLING LENGTH	THREADS PER INCH	TYPE OF THREADS	APPROX. WGT PER 1000 PCS.
2	2.210	2 3/8	11 1/2	STRAIGHT	500 Lbs.
2 1/2	2.730	2 3/8	11 1/2	STRAIGHT	965
3	3.260	2 3/8	11 1/2 to 8	STRAIGHT OR TAPER	1350
3 1/2	3.870	3 1/2	11 1/2 to 8	TAPER	2125
4	4.300	3 5/8	11 1/2 to 8	TAPER	2590

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WHEELING MACHINE PRODUCTS CO.
WHEELING, WEST VIRGINIA

Chaves County

E. J. Fisher No. 1 Foster, C NW NW Sec. 7-15-26. T.D. 1,107 ft.; R.U. mch.
Nay Hightower No. 1 Billingslea, C SW NE Sec. 28-11-30. T.D. 20 ft.; R.U. and S.D.
Interstate Minerals, Inc., No. 1 Dunigan, NW cor. Sec. 15-15-30. T.D. 2,485 ft.; prep to run csg.
J. & L. Drlg. Co. No. 2 Hurd, SW Sec. 11-11-26. T.D. 1,650 ft.; fsg. tools.

De Baca County

N. F. Woods No. 1 Jones, C NE SW Sec. 17-4n-20. T.D. 190 ft.; S.D.O.
James D. Ward No. 1 Summers, SE NE SW Sec. 15-4n-24e. T.D. 404 ft.; S.D. repairs.

NORTHWEST NEW MEXICO

Bernalillo County

Norins Realty Co., Inc., No. 2 Pajarito, Sec. 22-9n-1e. Ready to spud.
Norins Realty Co., Inc., No. 2 North Albuquerque, NE SE NW Sec. 10-11n-4e. Drlg. 4,150 ft.

McKinley County

Pet. Prod. Corp. No. 1 Santa Fe, NE NE NW Sec. 1-17n-9w. Drlg. 1,475 ft.

Rio Arriba County

Continental Oil Co.-L. M. Hughes No. 1 Esquibel, unsurveyed; approx. Sec. 28-28n-4e. Drlg. 1,874 ft.; 8⅝-in. at 1,689 ft.
Oil City Pet. Co. No. 1 Azotea, SW SW NE Sec. 11-31n-2e. Drlg. below 300 ft.

San Juan County

Continental Oil Co. No. 81 Rattlesnake, SW NW NW Sec. 1-29n-19w. Drlg. 720 ft.
Jack Amenda No. 1, NE NE Sec. 14-29n-13w. Drlg. below 250 ft.
Al Greer No. 2 fee, SW SE SW Sec. 10-30-11w. S.D. 660 ft. for 10-in.
Anna Oil Corp. No. 6 Govt., SW NE NE Sec. 33-30n-11w. S.D. 1,893 ft.

Socorro County

Central New Mexico Oil Co. No. 1, Belen gr., SE NW Sec. 16-3n-1e. T.D. 2,965 ft.; cmtd. 620 ft. 12½-in.; W.O.C.

Torrance County

Drice Co. No. 1 Garland, NE SE NE Sec. 32-7n-7e. S.D.O.; H.F.W. at 1,405-13 ft.
Estancia Valley Carbon-Dioxide Dev. Co. No. 1 Crawford, SE NE NE Sec. 32-7n-7e. Drlg. 1,080 ft.
Chief O. & G. Co. No. 1 Lee, NW NW SW Sec. 12-6n-7e. T.D. 2,215 ft.; C.O. 300 ft.

Valencia County

Old Spanish Grants, Inc., No. 1 San Clemente, C SE SW Sec. 23-7n-1e. Drk.; W.O. rotary.
C. A. Grober et al No. 1 Fuqua, NE NE Sec. 19-5n-3e. T.D. 840 (C.D.) ft.; W.O. title adj.

COLORADO

Adams County

J. B. Furstenberg et al No. 1 Hills, SE SE SE Sec. 27-3s-64w. T.D. 4,345 ft.; C.O. and cmtg. hole.

Archuleta County

Boone Dev. Co. No. 1 Newton, SE NW SE Sec. 18-33n-1e. T.D. 303 ft.; W.O. 10-in.
Pagosa Oil & Dev. Co. No. 1 Macht, C Sec. 32-36-1w. T.D. 1,840 ft.; rng. 6¼-in. with bttm. hole pkr. to top Dakota.

Elbert County

The Plymouth Oil Co. No. 1 Brosky-Union Pacific, Ramah district, was last reported drilling at 5,450 feet and preparing to run a Schlumberger test, to be followed by coring. Vice President Griffith and J. L. Tatum, chief geologist, are due to arrive at the well. Some coring already has taken place, supposedly starting at around 4,500 feet in the base of the Pierre. No formation data is being given out. Customary rumors under such circumstances are current. One of these, that cable tools are being moved in, lacks confirmation and is doubted.

Plymouth Oil Co. No. 1 Brosky-Union Pacific, C SW SW Sec. 19-10s-60w. Drlg. 5,450 ft.

Fremont County

Stanley Thomas No. 1 Rickwalt, SE SE Sec. 2-19s-70w. Drlg. 2,215 ft.
R. E. Hawks No. 1 Orndoff, NE SW NE Sec. 3-19s-70w. Drlg. 1,975 ft.; S.O. 1,970 ft.

Garfield County

Roaring Fork Oil Co. No. 1 Patterson, S NE Sec. 36-7s-88w. Drlg. 1,673 ft. in basal Penn.; section thicker than measured at Glenwood Springs.

Grand County

Interstate O. & R. Co. No. 1 Hinman, NE SE NW Sec. 11-2n-81w. S.D. 3,920 ft.; will D.D. to Morrison.

Huerfano County

J. G. Tomkins & Son No. 1 Pressey, NW NE NE Section 10-29s-69w, Oak View district, which put on a good show when it hit oil and gas at 412 feet and flowed over the top of a 30-foot mast, proved to have struck only a small pocket. Pump was installed and most conservative reports were that it made 12 bbls. of water in three days with only a show of oil. The Walsenburg backers of the test say there probably was a show of 4 to 5 bbls. of oil with the water on the pumping test. While disappointing, they declared "it was a lot of fun while it lasted."

J. G. Tomkins & Son No. 1 Pressey, NE NE NE Sec. 10-29s-69w. S.D. 417 ft.
S. W. Pressey No. 2 Alamo, C SW SE Sec. 3-27s-68w. S.D. 1,550 ft.

LaPlata County

N. Spatter No. 1-X Bryce, SE SW SW Sec. 31-33n-9w. Drlg. 1,865 ft.; S.G. at 1,862 ft., est. 100,000 ft.; will run 8¼-in. for W.S.O.

Mesa County

Continental Oil Co. et al No. 1 Miller, SW SW NW Sec. 36-8s-91w. Drlg. 7,791 ft.

Moffat County

Stanolind O. & G. Co. No. 5-SD Parkinson, CNL NW SE Sec. 22-4n-92w. Cmtd. 4¾-in. liner at 3,464 ft.; W.O.C.

Mackinnie Oil & Drlg. Co. No. 1 Coles, SW SW SE Sec. 1-3n-92w. Drlg. below 2,880 ft.; lowering 8¼-in. for W.S.O.; H.F.W. in top Dakota 2,880 ft.

C. R. Privett No. 1 Sutton, NE NE SW Sec. 1-5n-96w. T.W. 590 (C.D.) ft.; C.R. 10-in. to S.O.W. above gas at 525 ft.

Montezuma County

McElmo Oil Co. No. 1 West, NE NW NW Sec. 31-36s-17w. Drlg. below 4,800 ft.

Park County

South Park Oil Co. No. 1 Lemar, NE NE SE Sec. 34-11s-75w. T.D. 6,218 ft.; tstg. vol. of gas.

Prowers County

Continental Oil Co. No. 1 Ruby, C NE NW Sec. 31-21s-44w. Drlg. 5,325 ft.

Pueblo County

Eden O. & G. Co. No. 1 Horse Creek, SW SE Sec. 29-19s-64w. Drlg. sdy. L. 1,390 ft.

C. E. Puckett No. 1 Barber, NW Sec. 35-21s-66w. T.D. 860 ft.; rng. 6⅝-in. to 700 ft. for W.S.O.

Rio Blanco County

Buford Oil Co. No. 1 Govt., C SW SW Sec. 16-1n-91w. Drlg. dk. br. dolo. 3,045 ft.

Routt County

L. C. Craig and E. L. Moore No. 1-X Erwin, C SW NE Sec. 33-7n-85w. Ran csg. to 125 ft. and S.D.

Mid-Colorado Pet. Co. No. 1 Omholt, NE NE SE Sec. 29-4n-87w. Drlg. white sd. at 3,140 ft.; top 3,120 ft.

Steamboat Springs Drlg. Synd. No. 1 Brown, C NW NW Sec. 1-6n-86w. T.D. 1,270 ft.; fsg.; csg. stk. at 1,100 ft.

WYOMING

Big Horn County

Valentine M. Kirk, who was active in the early development of the Frannie field in Park County, has made a tentative location for a test in the southern part of the Big Horn basin in his No. 1 Frisby, NE SW NE Section 11-49n-94w, 8 miles west and south of the town of Manderson. It will be drilled with cable tools. The location is to the west of the line of folding upon which there are a number of structures and cut in the basin where the Wasatch and younger formations are at the surface.

Valentine M. Kirk No. 1 Frisby, NE SW NE Sec. 11-49n-94w. M.I.M.; (first report).

A. L. Rankin No. 1 Karjajla-Rankin, C SW NW Sec. 10-54n-94w. T.D. 500 (C.D.) ft.; tstg. heavy S.O.

Prescott & Mileski No. 1 Govt., NE NW SW Sec. 15-1n-93w. S.D. 832 (C.D.) ft. for csg.

Clifford S. Johnson No. 1 Johnson, CEL NW NW Sec. 24-51n-93w. Rig; W.O. engine.

Joan Oil Co. No. 1 Howell, NE NW NE Sec. 32-55n-97w. T.D. 2,420 ft.; fsg.

John H. Thomas No. 1 Govt., SW SW SE Sec. 3-54n-94w. Spdg. 50 ft.; Spence dome.

Campbell County

Frye & Kreiner No. 2, CSL NW NW Sec. 6-50n-72w. T.D. 723 ft.; rng. 5½-in. for W.S.O.

Carbon County

The Sinclair-Wyoming Oil Co. has a completion in its No. 3 Mahoney, C SE NW Section 34-26n-88w, on the Mahoney dome, in the Tensleep at 4,353 feet, total depth. The 7-inch was cemented on top of the pay at 4,292 feet and it swabbed at the rate of 56 bbls. in 24 hours. This is the second Tensleep producer drilled on this structure, and is an offset to the discovery in the deep horizon which was drilled in 1929 by the old Producers & Refiners Corp., which made 70 bbls. on the pump, the oil testing 34 gravity and being of mixed base. The new well had the top of the Frontier at 793 feet; Lakota at 2,150 feet; Morrison, 2,185 feet.

C. D. Cunningham et al No. 1 Union Pacific-fee, NW SE NE Sec. 21-22n-78w. M.I.M.

C. D. Cunningham et al No. 1 Union Pacific-Wolfe, SE NW SW Sec. 7-23n-78w. Drlg. wh. L. 378 ft.

Ohio Oil Co.-California Co. No. 5-A Kyle, C NE NW Sec. 26-21n-97w. R.U.R.

Ohio Oil Co. No. 2-A Baker, NW SW SW Sec. 2-23n-79w. Cg. 2,545 ft. in sd.; top Sundance 2,512 ft.; strong odor of gas.

Ohio Oil Co.-California Co. No. 3-A Kyle, C SW NE Sec. 26-21n-79w. Drlg. 7,700 ft. in Casper form.; no Madison.

Producers Oil Co. No. 1 Lake Valley, 200 ft. C of CNL Sec. 14-20n-88w. Drlg. 1,916 ft.

Converse County

The gas wells in the Shawnee area are being gauged and tested to estimate the recoverable reserves with a view to determine the feasibility of piping the gas to Douglas for domestic and commercial purposes.

H. O. Emery et al No. 1 Roberts, NE NW SE Sec. 2-31n-70w. Drlg. 300 ft.; (first report).

Jack Decker et al No. 1 Simonson, NW NE SE Sec. 16-32n-68w. T.D. 640 ft.; prep. to run 8¼-in.

Wyshawn Oil Co. No. 2 Lindley, C SW SW Sec. 35-32n-69w. Drlg. 1,953 ft.

Fred Bunker No. 1 Pestal, SE NE NE Sec. 32-32n-69w. Drlg. below 480 ft.

New Era Fuel Co. No. 2 Mary Gasper, CNL NW SW Sec. 25-32n-69w. T.D. 670 ft.; cmtd. 6⅝-in. at 655 ft.

Wyshawn Oil Co. No. 1 Lindley, NW SE SE Sec. 34-32n-69w. Drlg. in lower Minnelusa at unreported depth.

Wyoming Southern Oil Co. No. 1 Winda, SW NE NW Sec. 6-31n-69w. Loc.

Blue Ridge Oil Co. No. 1, SW NW SE Sec. 29-32n-69w. Spdg.

Fremont County

Lincoln O. & G. Co. No. 26 Tribal, NE SE SW Sec. 23-1s-1e. Spdg. 93 ft.

Tropic Oil Co. No. 1 Govt., C SE SW Sec. 34-27n-90w. Drlg. 3,425 ft.; S.O. in Dakota not coml.; will go to Lakota.

Consolidated Oil Properties No. 3 Ewart, C SW SE Sec. 16-1n-1w. S.D. 1,150 ft.

Ben Stewart No. 1 Darnell, NE SE Sec. 26-3n-1w. S.D. 2,245 ft. for 7-in.

C. E. Nelson No. 8 fee, CWL NE SW Sec. 27-3n-1w. Drlg. 695 ft.

Hot Springs County

Italo Pet. Co. No. 1 Skelton-Govt., SE SW NE Sec. 13-44n-98w. Drlg. 1,073 ft.

Lincoln County

J. W. Bailes No. 1 Govt., SE SW Sec. 28-43n-93w. T.D. 1,082 ft.; P.B. to 1,015 ft.; tstg.

H. C. Harris et al No. 1 Govt., SE NW NW Sec. 23-21n-117w. Drlg. 960 ft.

Natrona County

General Pet. Corp. No. 1 State, NW NE SE Sec. 16-35n-77w. Drlg. 4,050 ft. in steel sh.

Stanolind O. & G. Co. No. 8 T.P.-Midwest Oil, C NW SW Sec. 35-40n-79w. Drlg. r.b. 3,732 ft.

Niobrara County

The Continental Oil Co. awarded contract to Fredell Construction Co., of which A. J. Hardendorf, of Denver is head, for 15 miles of 6-inch pipe for its line from Lance Creek to the refinery at Glenrock. The remainder, consisting of 48 miles of 4-inch pipe, was awarded to the Osage Construction Co. Last named concern also has contract for the Cheyenne-Denver section of the Lance Creek-Denver line now under construction.

The Ohio Oil Co. released a location for No. 6 Cash O.P.C.-2 in the NW NW NE Section 4-35n-65w, a few feet from its No. 1 Cash O.P.C.-2 which was completed as a gas well in the Sundance at 3,860 feet in 1927. It will go to the Minnelusa. While an outside well in the deep horizon, it is well within what is believed to be the productive area.

Ohio Oil Co. No. 6 Cash O.P.C.-2, NW NW NE Sec. 4-35n-65w. Loc.; (first report).

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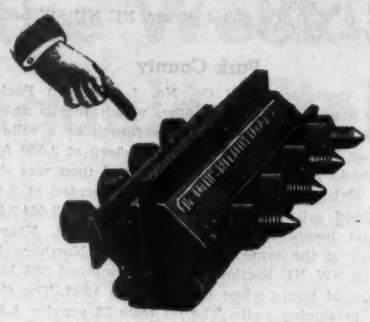

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MacKinnie Oil & Drlg. Co. No. 4 Thompson, SE SW NE Sec. 7-35n-65w. Bldg. rig.
Continental Oil Co. No. 1-B Dielman, SW SE NE Sec. 7-35n-65w. Drlg. 1,620 ft.; 13⅜-in. 415 ft.
Continental Oil Co. No. 13 Tom Bell, SE NE SE Sec. 33-36n-65w. R.U.R.
Ohio Oil Co. No. 11 Lamb Acct. 2, SW SE SE Sec. 5-35n-65w. Drlg. 4,158 ft.; top Sundance form. 4,050 ft.
Fall River Royalty & Producers Co. No. 1 Govt., CSL SE SE Sec. 35-40n-61w. Drlg. 345 ft.
Continental Oil Co. No. 7-B Schuricht, NW NW SE Sec. 6-35n-65w. Loc.
H. D. Moore et al No. 1 Beregren, NW Sec. 23-35n-63w. Drlg. r.b. 1,635 ft.
Adams O. & G. Co. No. 1 Baker, NE NE SW Sec. 8-35n-65w. Tent. loc.

Park County

The Continental Oil Co. No. 1 Northern Pacific, SE SE NW Section 23-58n-98w, which marks an extension of the Frannie field one-fourth of a mile to the west, was completed in the Tensleep at 3,530 feet. It swabbed 203 bbls. in 8½ hours and then was shut in for official test. The 7-inch was cemented at 3,442 feet. Good saturation was encountered at 3,464-3,520 feet and heavy saturation at 3,522-30 feet. Nearest producer is the same company's No. 1 Northern Pacific, SE SW NE Section 23, which pumped 388 bbls. the first 24 hours when completed in 1933. The field has 11 producing wells. The oil tests 28 gravity A.P.I. scale and has a sulfur content of 2.5 per cent.

Valentine M. Kirk and J. A. Watson No. 1 Johnson, NE cor. Section 6-57n-99w, in the South Elk Basin field, an old well deepened from the first Frontier at 2,452 feet, was deepened to 2,965 feet to test the second Frontier. It encountered water and was plugged and abandoned.

Ohio Oil Co. No. 1 Trans.-Ark., CSL SW SW Sec. 30-57n-98w. Drlg. 6,863 ft. in Embar: no oil shows.
Resolute Oil Co. No. 2 State, C SW SW Sec. 16-57n-101w. Drlg. 7,519 ft.

Platte County

Bill Griffin et al No. 1, NE SE NE Sec. 18-30n-67w. Drlg. 300 ft.

Subletie County

Frontier Pet. Co. No. 1 Govt., SE SE SW Sec. 1-28-114w. Drlg. 4,400 ft.
Yellowstone Oil Co. No. 1. 200 ft. N of S line of the H. L. Budd ranch, SE SE Sec. 31-31n-112w. S.D. 100 ft.
Wyo. Pet. Co. No. 1 Chas. Budd, C NE NE Sec. 10-29n-113w. S.D. 800 ft.; to install Diesel power.
Progressive Oil Co. No. 1 Haddenham, C NE SE Sec. 21-28n-113w. Drlg. 832 ft.
Texas Co. No. 3-G, NE NW SW Sec. 27-27n-113w. T.D. 909 ft.; C.O.

Sweetwater County

Selegna Oil Co. No. 1 Union Pacific, SW SW Sec. 11-20n-104w. Drlg. 5,100 ft.; top second Sundance 5,003 ft.
Sinclair-Wyoming Oil Co. No. 79 Lost Soldier, SE NE NE Sec. 10-26n-90w. Drlg. sh. 1,765 ft.

Uinta County

Stove Creek Oil Co. No. 1 Govt., NE SW NE Sec. 26-14n-119w. Cmtd. 10-in. at 1,420 ft.
Stove Creek Oil Co. No. 2 Govt., C SW NW Sec. 26-14n-119w. S.D. 300 ft.

Washakie County

Paul Boether No. 1 Govt., SW NW Sec. 4-47n-90w. Drlg. 669 ft.

Weston County

The Gray Refining Co., which has plants at Newcastle and Sheridan, has begun the purchase of crude in the Osage field on the gravity scale and in posting new prices announced it will keep in line with Salt Creek and the Mid-Continent scale. The new prices are $1.30 for 40-gravity crude and 2 cents off for each degree of lower gravity. There is quite a variation in Osage crude. For instance, Frank V. Eaton sold one tank that tested 36 and another that tested 42 gravity. Gray's purchases make a market for more operators than any refiner supplied from the field and represents a considerable percentage of the total production. His price posting, therefore, will receive considerable recognition.

Bock & Jackson No. 2 Government, CNL NW NW Section 31-46n-63w, which had the Coffee Grounds sands at 176-228 feet, pumped 110 bbls. the first 24 hours. This is not only a good completion, but again attracts attention to the sand which lies below the Muddy (Newcastle) and about 40 feet above the Dakota. This well is a west offset to the same firm's No. 1, which showed for 96 bbls. initially, and which is still doing 14 bbls. per day a month after completion, which is not bad for a 200-foot well.

Taylor, Dodge & Pauley No. 2, SE NW NW Section 17-46n-63w, was dry to 400 feet and is a completion.

Updike Brothers No. 1, NE SW NE Section 35-46n-64w, one-fourth of a mile southwest of the Keisling well which recently marked a half-mile extension of the pool to the southwest, is showing for a producer at 2,027 feet, but a lost bit is in the hole and completion is held up.

George Keisling No. 1, NW NE NE Section 35, which recently extended the pool, swabbed 4 bbls. per hour until tankage was full. The operator wanted to shoot it with 60 quarts, but the U. S. Geological Survey specified a 30-quart shot and then withdrew permission to shoot. Probably permission was withdrawn due to the restricted market which might not absorb the production from this and the Updike Brothers wells if shot.

F. R. Dilger, Tr., No. 16, SW SW NE Sec. 30-46n-63w. R.U.; (first report).
Sackett & Butcher No. 1, C NE NW Sec. 23-46n-64w. Drlg. below 1,200 ft.
Updike Bros. No. 1, NE SW NE Sec. 35-46n-64w. T.D. 2,027 ft.; fsg.
Hugh Updike No. 1, CEL NW SE Sec. 15-46n-64w. Drlg. below 2,000 ft.
Federal Oil Co. No. 9, CNL SE SE Sec. 15-46n-64w. Ready to spud.
Gose Oil Synd. No. 1, NE NE NE Sec. 28-47n-63w. C.O. after landing 4¾-in. at 4,900 ft.
West Osage Oil Co. No. 3, SW SE NE Sec. 15-46n-64w. Hd. tight sd. 2,140-54 ft.; will shoot.
John Borophy No. 1 George, SW SE NW Sec. 26-48n-64w. T.D. 2,190 ft.; rmg. through lower Minnelusa to S.O.W.

MONTANA

Big Horn County

Buzetti & Corkins No. 1, NE NW Sec. 23-1s-32e. M.I.M.

Blaine County

R. E. O'Keefe No. 1 Tetter, CSL SW SE Sec. 10-31n-18e. Drlg. 300 ft.
Montana Gas Corp. No. 1 Duncan, C NW SE Sec. 6-32n-24e. Drlg. 1,160 ft.

Carbon County

R. C. Tarrant No. 2, SE NW Sec. 4-6s-18e. Drlg. 1,925 ft.
Henderson Prod. Co. No. 1-H-11 Elk 11, SE SE NW Sec. 35-9s-23e. S.D. 1,810 ft.
R. C. Tarrant No. 2 Heare, NW SE NW Sec. 14-6s-19e. Cmtd. 8¼-in. at 2,335 ft.
Sha-Wa Pet. Co. No. 1 Govt., SW NW NE Sec. 35-9s-23e. S.D. 3,124 ft.
Miracle Oil Co. No. 2 Govt., CWL NE SE Sec. 4-6s-23e. T.D. 2,337 ft. (C.D.); C.O. to res.; will U.R. to bttm. and set csg.

Choteau County

Security Pet. Corp. No. 1 Johnson, C NE Sec. 23-26n-3e. Drlg. 2,036 ft.

Dawson County

Frank C. Hughes No. 1 fee, NW NE SE Sec. 5-14n-55w. Drlg. 1,065 ft.

Daniels County

White Tail O. & G. Co. No. 2 Wiley, NW NW NW Sec. 10-36n-50e. T.D. 1,884 ft.; res. under new management.

Fallon County

Montana-Dakota Utilities Co. No. 45, Unit 7, SE NW SW Sec. 25-6n-60e. Drlg. 320 ft.

Fergus County

Baughman & Singley No. 1 Skaggs, C NW SW Sec. 7-15n-20e. S.D. 1,200 ft.

Glacier County

Cut Bank has one completion and no new operations. K. D. Pardee No. 1 Tribal-179, SE NW SE Section 12-32n-6w, was drilled to 2,940 feet and had 350 feet of oil in the hole from the Cut Bank sand at 2,920-31 feet. It was shot with 40 quarts without improving it. It will be shot again.

Glacier Prod. Co. No. 1 State Unit, 800 ft. W of C Sec. 16-34n-5w. Drlg. 560 ft.; Colo. 295 ft.; 10¾-in. 319 ft.
Texas Co. No. 1 Bonnett, NW SE SE Sec. 8-32n-5w. Drlg. 1,835 ft.; Colo. 580 ft.; 10¾-in. 620 ft.
Glacier Prod. Co. No. 1 Math Unit, SW NE SW Sec. 36-35n-5w. Drlg. 815 ft.; Colo. 255 ft.; 10¾-in. 320 ft.
Texas Co. No. 2 Govt., NE NW NE Sec. 17-32n-5w. Drlg. 1,980 ft.
Par Oil Co. No. 1 Tribal-170, SW NW SW Sec. 7-32n-5w. Drlg. 2,105 ft.
Lawler No. 3 Hoerr-Harlan, NE SW SW Sec. 5-33n-5w. Drlg. 2,760 ft.
Santa Rita O. & G. Co. No. 3 Lander, C S½ SE Sec. 16-35n-6w. Loc.
Nadeau Bros. No. 5 Farmers State Bank, CEL SE NE Sec. 17-33-5w. Drlg. 2,903 ft.

Judith Basin County

Fletcher E. Hunt No. 1 Hoven, SE NE NW Sec. 30-14n-15e. Spdg.
Fletcher E. Hunt No. 3, NW SE NE Sec. 30-14n-15e. Res. at 1,825 ft.

Park County

Ben Ryan et al No. 1 Burgess, SE SW NW Sec. 28-2s-11e. Drlg. 1,550 ft.

Petroleum County

H. Clark Rowland No. 1 Kalispel, NE NE SE Section 35-14n-25e, Flatwillow district, was plugged and abandoned at 1,345 feet. It had a good show of oil in the first Cat Creek sand at 680 feet and at that point went into a fault showing a 45-degree dip. Rig was moved back half a mile to the west for his No. 1 Brundige-Mink.

H. Clark Rowland No. 1 Brundige-Mink, SE NW Sec. 35-14n-25e. Skdg. rig from No. 1 Kalispel; (first report).
Watson Oil Co. No. 1 Austed, SW NW SE Sec. 22-13n-28e. T.D. 445 ft.; W.O. 12½-in.
O. B. Canfield No. 2 Govt., SE NE NE Sec. 21-17-24e. Drlg. 779 ft.

Phillips County

Treasure State Pool O. & G. Co. No. 1 Govt., C SE SW Sec. 2-24n-23e. Lost hole at 560 ft.; skdg. rig.

Pondera County

Jones-Chambers No. 1 Erickson, SW SE SW Sec. 3-27n-4w. S.D. 1,932 ft.; will pull 7-in.; U.R. 10-in. and drill to Devonian.

Richland County

W. M. Fulton No. 1 Richardson, SW SW SE Sec. 29-26n-52e. Drlg. 500 ft.; Poplar dome.

Teton County

California Co. No. 1 Unit, NE SE SW Sec. 26-27n-9w. Drlg. L. 1,318 ft.
Gulf State Oil-Zodiac Oil Co. No. 1 Coffee-Wallenstein, SW SW SW Sec. 5-27n-5w. T.D. 2,525 (C.D.); ft.; fsg.

Toole County

J. W. Perron No. 2 Hugi, C SE NW Section 11-35n-3w, in the Rocky Ridge pool on the west side of Kevin-Sunburst, is a near completion and looks like a much better than the average well. It hit the contact at 1,840 feet and went in only a few inches when pressure forced the tools up the hole where they lodged. A control head was installed and when the tools were recovered the well flowed for about two hours and then stopped. It is now standing full of oil and pump is being installed. While running tubing it slopped over several times. It is a northwest offset to A. E. Crumley No. 13 Fryberger which came in flowing at the rate of 300 bbls. and made 150 bbls. the first 24 hours on the pump after the head was off.

J. W. Perron No. 2 Hugi, C SE NW Sec. 11-35n-3w. T. D. 1,840 ft.; prep. to test.
Lewistown-Flathead Oil Co. No. 1 Bashoe, SE SE SE Sec. 9-35n-1w. Drlg. 1,809 ft.; wtr. in contact at 1,741-43 ft.
Consolidated Gas Co. No. 1 Haukland, C SW NW Sec. 27-33n-2w. Drlg. in top Sunburst at 1,480 ft.
A. Beardslee No. 9 Swears, CSL SW NW Sec. 9-35n-2w. T.D. 1,797 ft.; contact 1,794 ft.; 150 ft. oil; acd. 500 gal.
Big West Oil Co. No. 3 Engle, CSL SW SW Sec. 1-35n-3w. T.D. 1,625 ft.; rng. tbg. to test.
C. D. Stocks No. 3 Haggerty, SE NW SW Sec. 13-35n-2w. S.D. 1,580 ft. until spring.
W. M. Cassidy No. 1 Phoenix, CNL NW NW Sec. 28-35n-4w. T.D. 1,900 ft.; cmtd. caves with 25 sacks; W.O.C.
Fulton-Commonwealth No. 2 Thompson, NW NE SW Sec. 28-35n-3w. Cmtd. 12½-in. at 95 ft.; W.O.C.
Big West Oil Co. No. 2 Engle ,SE SW SW Sec. 1-35n-3w. T.D. 1,602 ft.; sd. 1,573-1,602 ft.; shot 70 qts.; no results; shot again 50 qts.
H. C. Morton No. 8 Morton, C SW NW Sec. 24-34-2w. Drlg. 1,190 ft.
Chas. Grant et al No. 1 Anderson, SE NE NE Sec. 26-35n-4w. S.D. 2,109 ft.

Yellowstone County

Wyomont Oil Co. No. 1 Boetcher-Sayre, C NE SW Sec. 26-3s-24e. Drlg. 955 ft. on top of Dakota.
Signal O. & G. Co. No. 1 Stallinberger, NE NE SW Sec. 18-3n-23e. Drlg. 4,597 ft.
Riverton Oil Co. No. 1 Fox, CEL NW NE Sec. 14-2n-23e. Drlg. below 1,795 ft.

UTAH

Grand County

Cane Creek Oil Co. No. 1 Govt., NW SW Sec. 31-26n-21e. Drlg. br. sh. 1,710 ft.; S.G.
Crescent Eagle Oil Co. No. 1 Brendel, SW SE Sec. 4-22s-19e. Drlg. 4,010 ft.
Columbia Crude Corp. No. 1 Rath, NW SW SE Sec. 12-25s-20e. T.D. 3,992 ft.; trying to S.O.W.; to D.D.

Summit County

Longwell Pet. Co. No. 1, SE SW SE Sec. 35-3n-5e. T.D. 2,876 ft.; sdtrkg.

NEBRASKA

Garden County

Bergman & Bull No. 1, Sec. 12-16n-42w. R.U.S.T.

Keith County

Twentieth Century Oil Co. No. 1 Stuken, C NW NW Sec. 21-14n-37w. Drlg. sh. 1,200 ft.

Scotts Bluff County

Houston Pet. Co. No. 1 Judd, NE NE NE Sec. 15-22n-57w. Spd. and S.D.

Sioux County

Union Oil Co. of Calif. No. 1 Agate-15, NW SE SE Sec. 15-28-55w. T.D. 6,842 ft.; D.P. twisted off at 4,830 ft. in new hole; S.D.O.; may abd.
Union Oil Co. of Calif. No. 1 Cook, SE Sec. 16-33n-51w. Drlg. 5,200 ft.

Pawnee County

Blazer & McClure et al No. 1 Allen, NW NE SW Sec. 16-1n-10e. S.D. 650 ft.

Richardson County

H. C. Stevens and Ed Uhri No. 1 Harlow Est., C SE NE Sec. 32-1n-13e. S.D. 700 ft.

Adams County

V. N. Souligny et al No. 1 Katzberg, C SW Sec. 26-7n-10w. S.D. 125 ft.

McPherson County

Nebraska Oil Corp. No. 1 McConnell, SE SE NE Sec. 25-17n-31w. Set 4-in. csg. 1,735 ft.; drlg. 2,423 ft.
Pawnee Oil Co. No. 1 Childerston, C NW Sec. 28-15n-[illegible] R.U.R.

Dawes County

Hubbell Pet. No. 1 State, SW NE Sec. 16-33n-51w. Rotary rig.

Michigan Field Report

By
O. C. PRESSPRICH

Largest Well of the Week Is in New Bloomingdale Field

SAGINAW, Mich., Sept. 26.—Allegan County oil fields, activity spurred by recent Overisel Township strikes, continued to pour forth an increasing daily crude output, to dominate activity in Michigan oil fields. Of 12 oil wells added in Michigan fields, 8 were in Allegan. Daily potentials of Allegan fields rose more than 2,000 bbls., while the total for all fields from new producers was approximately 4,200 bbls. daily. Eight dry holes were blotches on the picture.

One big well in Bloomingdale Township, Van Buren County, held top production honors for the week, accounting for more than 1,400 bbls. daily, estimated, to hold this newest Michigan pool in the limelight. However, a dry hole only three locations north of the most recent Van Buren addition indicated further development to the north may be blocked by a disappearing pay zone. But this did not prevent issuance of 10 drilling permits last week for wells in numerous sections of Bloomingdale in practically all directions from the discovery, to probe further the prolific pay being tapped at shallow depth.

Two Central Michigan pools share in the week's production. The Edenville Township pool of Midland County continued development of its state-owned lands with a 500-bbl. producer in proved territory, and Gladwin County added two producers. One of the Gladwin producers, in Hay Township, immediately east of the north (Wicklund) pool of Buckeye, was a surprise, and surpassed all other wells in the township. Buckeye maintained its score of a least one new oil well weekly, although the well is small.

Current developments in the Michigan petroleum picture have shifted most interest to the southwestern Michigan fields. The drilling play also appears definitely shifted away from Central Michigan pools, where, in the past year, wildcat discoveries have centered interest on the possible linking of heavily producing pools. Recent permit lists have been top-heavy with projected drilling activity in the new areas in the southwest part of the state. One of the contributing factors to exploration in these fields, besides the flush early showings, is the lower drilling costs. Allegan and Van Buren County fields tap their production in the Traverse from 1,225 to 1,365 feet. In Central Michigan fields, including the Clare-Freeman, Gladwin-Buckeye, and Edenville, production is found in the Dundee, or the still lower Monroe, ranging from 3,400 to 4,700 feet.

The Freeman Township, Clare County pool, failed to break into the production column last week, and recorded its second dry hole, temporarily checking southerly extension more than 1½ miles from the discovery.

Allegan County

Overisel Township (4n-14w)—Six of the eight producers added in Allegan fields this week form a connecting link with the Overisel discovery although only two are in Overisel Township. Other producers added were in bordering townships of Heath and Monterey. One of the two Overisel producers continued to advance the theory of a northwesterly-southeasterly production trend from the discovery well. This was again indicated by Swanson Consolidated Oil Co. No. 1 Essink, NW SW SW Section 22, rated as a 450-bbl. natural producer. In the past week development in Section 21 showed this trend, and so far favorable wells have been developed in Sections 21, 22, and 26, all northwest of the discovery, which is in Section 36. Black Rock Oil Co. No. 3 Scholten, SE NE SW Section 36, westerly extension from the discovery in the same section, acidized to 400 bbls. daily. Six other tests in various parts of Overisel were due to sample the pay zone within a week.

Heath Township (3n-14w)—Section 1 development extending southward the Overisel play in Section 36, resulted in three producers last week. Development in the area is rapidly assuming major proportions as successful tests continue to be brought in on the border of the Overisel discovery. Largest of the south Overisel extensions in Heath was Muskegon Development Co. No. 1 Scholten, SE NE NW Section 1, a 600-bbl. daily acidized producer. Two other Heath producers of the week, located in the northeast areas of the township, showed the greatest decline of tests yet brought in, both being 100-bbl. natural producers and scheduled for acid. Both had indications and formation depths said to promise material increases when acidized. Fortney Oil Co. No. 2 Wessling, NE NE NE Section 1, and Gordon Oil Co. No. 5 Scholten, NW NE NE Section 1, each gauged 100 bbls. naturally, and planned to acidize. More Section 1 exploration was assured by drilling permits.

Monterey Township (3n-13w)—Fortney Oil Co. developed the lone Monterey producer of the week at its No. 5 Wessling, NW NW NW Section 6, cornering Section 36 of Overisel Township to the southeast, a 100-bbl. natural producer, scheduled for acid. Before the Overisel strike, development in Monterey was confined to the central and eastern portions of the township. Exploration has now spread to the western and northwestern parts of the township.

Salem Township (4n-13w)—Development in the Salem area, a highly productive field before the Overisel discovery, continued unrelated to other Allegan strikes, with two oil wells in central Salem. J. B. Northcott No. 2 Shipper, SW SE NW Section 21, was acidized to 200-bbl. production, and Mesel & Speilberg No. 1 Jager, SE NW SE Section 21, was completed as a 100-bbl. acidized producer.

Allegan Township (2n-13w)—Roy L. O'Brien No. 1 Raber failed as a producer, to record the lone dry hole for Allegan County fields last week. It was the only active test in the township.

Van Buren County

Bloomingdale Township (1s-14w)—Eclipsing all state production for the week for a single well, Fisher-McCall Trust No. 1-B, NE SE SW Section 9, north offset to the Bloomingdale discovery well. It flowed an estimated 60 bbls. an hour. In the few hours the test flowed unrestricted operators estimated it would exceed 1,400 bbls. daily in its natural state. While extensive exploration was indicated for the Bloomingdale area in last week's permit lists, two dry tests were completed simultaneously with the big producer. Only three locations north of the week's big well, the Norton-Stewart No. 1 Haven, SE SE NW Section 9, came in dry. This may temporarily block development to the north. Columbia Oil & Gas Co. No. 1 Healey, SW NW NW Section 10, east of the prolific discovery and offset wells, also may check exploration in that direction. Operators looked to the extensive exploration of the next few weeks to determine more definitely the extent of the Bloomingdale field.

Midland County

Edenville Township (16n-1w)—Sun Oil Co. continued favorable development of its state lease with another producer. The No. 12-B State-Edenville, SE NW SE Section 27, was estimated at 475 bbls. natural production, and operators believed the well would double this initial production when acidized. The well rated to equal or exceed the discovery.

Warren Township (16n-2w)—Failure was logged at C. W. Teater No. 1 Tushingham, SW NE SW Section 26, in an attempt to prove a western extension of the Edenville pay zone.

Gladwin County

Hay Township (18n-1e)—Hay Township stole production honors away from Buckeye last week with the largest producer yet found in the area. T. F. Caldwell No. 1 Palmer, NW NW NW Section 21, bordering on the east of Section 13 of the north Buckeye (Wicklund) pool, developed production of 225 bbls. after acid. The test had possibilities of forecasting a new play in Hay Township as the largest producer to date, and the fact that development has been scanty in Section 13 of Buckeye, off to the west.

Buckeye Township (18n-1w)—Buckeye continued to maintain its unbroken new production record with a small producer tapped at Kales-Graves Co. No. 3 Woodring-Chovich, SW NE SE Section 23, the midway pool discovery sector, now linked to the south (Oard) pool. The test was acidized to 50 bbls. daily, considerably below surrounding production.

Clare County

Freeman Township (18n-6w)—In Section 15, about 1½ miles to the south, an attempt to find the production vein found in Section 3, failed last week at McClanahan Oil Co. No. 1 Perkins, NE NE NE Section 15. The test uncovered water at 67 feet in the Monroe. The hole will be plugged back to a higher level, where gas pressure was apparent, in an attempt to convert the well into a commercial producer. A week ago a dry hole was recorded in Section 5, about 1½ miles west of the discovery.

Montcalm County

Winfield Township (12n-9w)—Taggart Brothers, Inc., No. 2 Jacks Estate, NE NW NW Section 7, failed to log commercial production and will be abandoned.

Ottawa County

Crockery Township (8n-15w)—Fletcher Carscallen No. 1 Copp, SW NE SW Section 9, only active test in the township, failed to find an oil showing and will be abandoned.

Roscommon County

Higgins Township (23n-2w)—Another attempt to discover commercial oil production in Roscommon County, beyond the northern edge of present exploration in Michigan, failed at Sun Oil Co. No. 1 Salling, NE SE NE Section 2.

Southwest Texas Fields

(Continued from Page 88)

H. H. Howell No. 1-A Stillwell, perforated casing 5,275-5,303 feet, 100 bbls., three-sixteenths inch choke. Texas Gulf Production Co. No. 2 Stillwell, perforated casing 5,239-47 feet, 45 bbls., 5/64-inch choke.

Jim Hogg County

Las Animas field: Darby Petroleum Co. No. 5-B Holbein, perforated casing 1,833-37 feet, 5 bbls. per hour, five-sixteenths inch choke.

McMullen County

San Jose field: V. G. Schimmel No 3 Kountz, 1,200½ feet, abandoned.

Nueces County

Clara Driscoll field: O. W. Killam No. 7 Ellick, perforated casing 5,433-47 feet, 125 bbls., eighth-inch choke. Pan American Production Co. No. 1 Driscoll, perforated casing 3,805-09 feet, 128 bbls., 7/32-inch choke.

Refugio County

Refugio field: Houston Oil Co. No. 54 Rooke, 6,253 feet, 194 bbls., eighth-inch choke. Copan Oil Co. No. 20-B O'Connor, sand 5,887-5,909 feet, 779 bbls., quarter-

inch choke. Tomoconnor field: Copan Oil Co. No. 29 O'Connor, 5,930 feet, 670 bbls., quarter-inch choke. Hewitt & Dougherty No. 76 Lambert, 5,907 feet, 118 bbls., quarter-inch choke. Quintana Petroleum Co. No. 33 O'Connor, 5,925 feet, 1,333 bbls., three-eighths inch choke.

San Patricio County

East White Point field: Plymouth Oil Co. No. 4 Nelson, perforated casing 5,673-77 feet, 6½ bbls. per hour, 7/64-inch choke. Plymouth field: Plymouth Oil Co. No. 102 Welder, 5,894 feet, 5 bbls., 7/64-inch choke.

Victoria-Calhoun Counties

Heyser field: Gulf Oil Corp. No. 4 R. R. Bonner, 5,757 feet, 30 bbls. of oil, 20 per cent salt water, quarter-inch choke. George Echols No. 4-B Landers, 5,609 feet, 272 bbls., 9/64-inch choke. Humble Oil & Refining Co. No. 8 Marshall, 5,484 feet, 209 bbls., three-sixteenths inch choke. Port Lavaca field: S. J. Ryan No. 1 Bickford, 6,532 feet, abandoned.

Zapata County

Comitas field: Gilcrease Oil Co. No. 27-B Haynes, 1,223 feet, abandoned.

Eastern Fields

(Continued from Page 82)

In Upshur County, Hope Natural Gas Co. is drilling at 3,050 feet on the Hazen Phillips farm in Banks district, and at 300 feet on the Annette Riley farm in Elk district.

In Marshall County, Manufacturers Light & Heat Co. has a location on the Robert and Nettie Buzzard farm in Liberty district, elevation 1,278 feet. In this district, Cameron Light & Heat Co. has a location for No. 4 J. B. Chambers, elevation 1,302 feet. In Wetzel County, J. T. McIntire made a location on the Clarence Erkwine farm in Proctor district, elevation 1,082 feet.

In Clay County, Pittsburgh & West Virginia Gas Co. is drilling at 230 feet in the No. 7658 J. D. Engle; at 1,090 feet in No. 7659 Amanda Jarvis; and will abandon the No. 7657 on the Lulu C. Hardman land at 2,370 feet. All are in Otter district.

Canadian Fields

Completions and Operations in Northwest and in Ontario

By VICTOR LAURISTON

CHATHAM, Ontario, Sept. 24.—Deliveries from Turner Valley to the Calgary refineries in August totaled 680,289 bbls., compared with a previous high in July of 566,783 bbls. In August Imperial Oil Refineries took 472,481 bbls., including 446,780 bbls. of crude and 25,701 bbls. of naphtha; and British American Oil Co. took 207,808 bbls. of crude. Deliveries for the eight months of 1938 to the two refineries total 3,657,173 bbls.

Including York No. 1 and Royalite No. 33, recent completions, the restricted flow potential of the field is now estimated at 52,028 bbls. a day.

Gas Conservation Postponed

Following a request from the Alberta Petroleum Association and a series of conferences with operators, the Alberta Conservation Board has postponed enforcement of gas-well proration in Turner Valley from September 14 to October 15. The delay is intended to give operators an opportunity to study plans for returning the residual gas to the field under compression.

Under the repressuring scheme it is proposed to permit full natural production of wet gas from wells in the gas-naphtha area. This gas will be piped from the separators to the absorption plants and the naphtha extracted. Compressors will then force the surplus gas, estimated at 250,000,000 feet a day, back into the producing formation through a few selected input wells. Installation of the necessary repressuring system is estimated to cost $2,000,000, which it is proposed to defray by a deduction of 40 cents per barrel on naphtha and natural gasoline produced.

An expert from Clark Brothers Co. of Olean, N. Y., will be invited to visit the field and consult with a special committee of the Alberta Petroleum Association comprising J. Grant Spratt, George E. Watt, Arthur G. Graves, Herbert Greenfield, and Fred M. Graham. The committee in the meantime is securing data from Imperial Oil, Ltd., the Canadian Western Natural Gas Co. and other companies interested in gas and naphtha production.

Gas Conservation Challenged

The validity of the gas conservation measures undertaken in the Turner Valley field by the Alberta Petroleum and Gas Conservation Board has been challenged in a suit instituted against the attorney general of Alberta and the Conservation Board. The plaintiffs are Mercury Oils, Ltd., and Miracle Oils, Ltd., owners of producing gas wells in South Turner Valley, and Gas & Oil Products, Ltd., operators of a gasoline absorption plant located on the Mercury lease in Section 4-19-2w5. All three companies are headed by A. H. Mayland, pioneer South Turner Valley operator.

The plaintiffs claim that the Oil and Gas Conservation Act of 1938 under which the Conservation Board was appointed is ultra vires of the Alberta legislature; and that amendments to the natural resources agreement between the dominion and the province, designed to facilitate conservation, are also ultra vires. The plaintiffs ask a court order setting aside the order of the board whereby the flow of 96 designated gas wells was restricted to approximately 40,000,000 feet a day. The order was originally to have become effective September 14, but enforcement was deferred till October 15.

Turner Valley Completions

In Section 5-19-2w5, West Central Turner Valley, Royalite Oil Co. No. 33, LSD 2, finished at 7,676 feet after getting the lime at 7,239 feet, developed a natural flush production around 650 bbls. a day. It was acidized, increasing temporarily to over 1,000 bbls. Allowable was set at 500 bbls. a day after official test.

In Section 29-18-2w5, Commoil No. 2, LSD 10, finished 469 feet in the Madison at 7,665 feet, yielded 1,600 bbls. flush after acidizing and has been given allowable of 1,100 bbls. a day.

In Section 20-18-2w5, Sunset Oils No. 2, LSD 7, finished in the black lime at 7,525 feet after getting the Madison at 7,068 feet. It has been tubed and is testing production, with indications of a large producer. Location is on acreage subleased from Okalta Oils, Ltd.

York's Large Producer

In Section 20-18-2w5, York Oils No. 1, LSD 2, finished 445 feet in the lime at 7,435 feet, developed production rate on official test of 2,655 bbls. a day, and has been given an allowable of 2,084 bbls., the largest in the field. Frontier Royalties No. 1 ranks second with 1,955 bbls. York No. 1 has one of the lowest gas-oil ratios in Turner Valley, 788 feet per barrel of crude, only United-Brown No. 5 and Globe No. 1 showing lower gas-oil ratios. Bottom-hole pressure was among the highest in the field.

The completion extends the proven field considerably to the southwest and will probably encourage more westerly drilling. Among recent completions, only Royalite No. 30, with 1,250 bbls., and Royalite No. 31, with 400 bbls., were drilled farther to the west, while in a north and south line with the York well are some of the best of the recent producers.

Tests in the Lime

In Section 20-18-2w5, Consolidated Royalties No. 1, LSD 14, three-fourths mile north and one-fourth mile west of York No. 1 producer, is deepening below 7,615 feet after getting the Madison at 7,545 feet.

In Section 16-18-2w5, Brown Oil Corp. No. 5, LSD 12, got the Madison limestone around 6,657 feet and is cementing a few feet in.

West of the proven field, Okalta Oil Co. No. 6, LSD 3, Section 30-18-2w5, is standing cemented in the top of the lime at 9,745 feet, pending the outcome of negotiations with reference to adjacent acreage.

Moose Dome Test

On the Moose Dome structure, northwest of Calgary, Devonian Petroleums, Ltd., of Vancouver, British Columbia, is preparing to deepen Moose Oils No. 2, LSD 8, Section 29-22-6w5. Moose Oils No. 1, LSD 16, same section, discontinued drilling temporarily at 2,815 feet after encountering 10 gas and oil horizons below 490 feet. The well had a considerable wet gas flow with 1,280 pounds rock pressure. Moose No. 2, LSD 8, got a small commercial production of high-grade crude around 1,553 feet and has pumped and shipped some crude. This test will now be deepened to the lower and more productive horizons indicated in No. 1. Drilling in this area begins in the lower Madison limestone or the underlying Banff shales, and the main producing horizon is looked for in the Devonian lime around 3,000 feet.

Fallen Timber Prospect

Possibilities of oil and gas in the Fallen Timber area of the northern Alberta foothills are being investigated by the federal Department of Mines and Resources. The area under survey lies 55 miles northwest of Calgary, 15 miles west of the Calgary-Edmonton line of the C.P.R. and 25 miles north of the Calgary-Banff Highway. Geological Survey officials are now in the field.

Geological interest in the 370 square mile area centers chiefly in four anticlinal structures. Two of these have been partially tested by drilling, but no holes have been carried to the Paleozoic limestone, believed to lie at a minimum depth of 7,500 feet. A well put down on the Monarch anticline in 1914 was carried to only 3,500 feet. A small crude seepage was met at 808 feet, and in some of the lower sandstone horizons small shows of crude were met with sufficient gas to run the drilling outfit.

A structure test is now being drilled on the Red Deer River-Silver Creek anticline; and similar tests have been drilled at the north end of the Red Deer River a short distance north of Fallentimber Creek, and also at its southern end near Silver Creek. Oil seepages have been reported at different depths, though none of the tests were carried below the basal part of the Belly River formation. Good motor roads run west into the area from Olds, Didsbury and Carstairs, and supplies are obtained chiefly from Sundre and Cremona.

Del Bonita Structure

On the Del Bonita structure south of Lethbridge, Terminal Oil Co. No. 1, NE quarter Section 18-1-21w4, is cementing a liner to bottom and will gun-perforate the oil zone between 5,056 and 5,136 feet and treat the Madison lime with 5,000 gallons of acid. The test got good showings in the top of the Madison when drilled some years ago. When this work is completed, Terminal No. 2, NW quarter Section 7-1-21w4, will resume from 175 feet, using gas from No. 1 for drilling fuel. Terminal Oil Co. has taken over the holdings of the Nordon Corp. of Alberta in this area and will clean out, gun-perforate and acidize the Nordon-Twin River well, which also had a good show of crude in the top of the Madison. In addition to the Madison and upper horizons, there are prospects of Devonian production in this area, and a deep test of the lower formations will be undertaken later.

East Central Alberta

In the Vermilion district, East Central Alberta, Wain Town Gas & Oil Co. No. 1, LSD 16, Section 26-50-7w4, is deepening after cementing 6-inch casing at 1,004 feet. The company has made tentative arrangements to supply natural gas to the town of Vermilion. The Ten Well Oil & Gas Co. of Vermilion, which drilled a previous test in this area, has a substantial interest in the Wain Town company.

Ontario Oil Show

In Chatham Township, Kent County, Ontario, a test for water drilled by Goldwin Simpson of Dresden on the Marshall McFadden farm, Concession 10 and Center Side Road, encountered oil in two shallow horizons. The first and largest show was around 295 feet and drilling was continued to 405 feet with some increase in production. About 50 bbls. have been bailed or pumped at various times. An attempt was made to shoot the well with 150 pounds of dynamite, but the charge failed to explode.

Rodessa

(Continued from Page 28)

without restriction.

On January 3, 1938, only three days after the effective date of proration, an injunction was granted to William Monroe Layton, an operator in the field, allowing the field unrestrained production until March 7, 1938, at which time the record discloses only repressuring would help.

At the end of 12 months' operation in the oil area, 68 wells were flowing, 13 were on gas-lift, and nine were on the beam. Seven wells were making in excess of .5 per cent salt water.

We have placed the pressure-production data, as obtained from Tables 1, 4, and 6, upon Chart 1. From a study of this chart it can readily be observed that reservoir energy as is represented by reservoir pressure has been hastily depleted in proportion to rate and volume of withdrawal. It is reflected by fact that at the end of the 12-month period covered in Chart 1 Arkansas spent 76 per cent of her pressure to obtain 2,500,000 bbls. of oil and 14,000,000,000 cubic feet of gas, Louisiana 34 per cent of her pressure to obtain 16,000,000 bbls. of oil and 75,000,000,000 cubic feet of gas, and Texas 14 per cent of her pressure to obtain 11,000,000 bbls. of oil and 41,000,000,000 cubic feet of gas. The variance in area perhaps does not make that comparison a fair one, but the utilization of the energy placed at our disposal by nature for the purpose of lifting the oil stored in the ground together with an estimate of the portion of the total estimated recoverable oil contained in each segment of the field should be fair. The tabulation given below sets out the barrels of oil and thousands of cubic feet of gas lifted to the surface with and by each pound decline in reservoir pressure.

Segment—	Pressure decline (lbs.)	Recovery per lb. decline	
		Oil, bbls.	Gas, M.C.F.
Arkansas	1,900	1,316	7,368
Louisiana	597	26,801	125,628
Texas	285	38,596	143,860

By employing published data on unproduced known reserves, we can first obtain the relative position of each state participating in the Rodessa oil and gas reservoir, and in turn use the information to calculate the volume of oil and gas that should be recovered per pound decline in pressure —on a comparative basis.

Segment—	July 1, 1938 reserves*	Per cent of total
Arkansas	24,000,000	8
Louisiana	140,000,000	47
Texas	132,000,000	45

*Based upon the continuation of drilling.

Along this line of reasoning, the Arkansas portion is only 17 per cent as large as Louisiana, and 18 per cent as large as Texas. Therefore, it should have recovered 4,556 bbls. of oil per pound pressure decline if compared with Louisiana, or if compared with Texas, 6,947 bbls. per pound pressure decline. In other words, Arkansas so produced her part of the field with only 29 per cent of the efficiency of Louisiana, and 19 per cent of the efficiency of Texas. Those are very conservative statements.

An argument may be offered that Chart 1 does not reflect true conditions in that Louisiana and Texas were operating under settled conditions when the Arkansas segment was discovered. To answer that contention we have prepared Chart 2 which depicts pressure-production data during flush times, or the first 12 months' operation in each segment. By observation it can quickly be ascertained that the same situation obtained during the period of flush production as later.

One of the inexorable laws of nature is that pressure decline is a function of withdrawal, without replacement, from any oil and gas reservoir. The rate of decline is in proportion to the rate of withdrawal and together with the amount of work or lifting value obtained from each pound of pressure spent controls the operating efficiency of the entire reservoir.

Table 7 sets out the withdrawal of oil and gas per acre by months, from July 1937 to June 1938, inclusive, from each part of the Rodessa field. These represent prorated acres, or the acreage taken into account in setting allowed production. Arkansas is drilled to a density of one oil well to 14 acres, Louisiana 23 acres, and Texas 20 acres. The acreage carried on proration schedules for each of the months is that used in the necessary calculations.

TABLE 7—OIL AND GAS WITHDRAWAL PER ACRE

(By months)

Date—	Ark.		La.		Texas	
	(*)	(†)	(*)	(†)	(*)	(†)
July, 1937	.34	.06	2.17	1.02	2.13	.65
August	1.25	.25	2.11	.99	2.07	.50
September	2.42	1.02	2.01	.90	1.60	.57
October	5.35	1.77	1.70	.90	1.39	.53
November	4.77	1.71	1.65	.87	.95	.42
December	3.02	1.33	1.63	.90	.86	.40
Jan. 1938	2.28	1.80	1.64	.77	1.00	.43
February	1.89	1.68	1.44	.59	1.38	.50
March	1.89	1.67	1.44	.56	1.60	.59
April	1.58	1.02	1.44	.57	1.51	.60
May	1.45	.87	1.35	.59	1.49	.59
June	1.43	.93	1.26	.60	.74	.36

*Thousands of barrels of oil. †Millions of cu. ft.

From the information given in Table 7, Chart 3 was constructed. A few minutes' study of Chart 3 will give reply to a host of questions. It is clearly obvious that the rate of withdrawal from the reservoir on the Arkansas side of the field has been, and is, far in excess of that amount conducive to the best interest of the reservoir.

Charts 1, 2 and 3 are definitely interrelated and provide a practical lesson in controlled production that should not be dismissed. They further prove that of all the factors to be considered in an intelligent program of controlled production—geologic structure, number of wells and their position on the geologic structure, well spacing program, rate of pressure decline, the hydrostatic head of water, permeability and porosity of the oil-bearing sands, free and soluble gases, physiochemical nature of reservoir rocks and fluids, rate of withdrawal, etc.—the rate of withdrawal is by far the most important. Simmered down to the final analysis, the regulatory body, under the best laws, has or can control production only by, first, a reasonable well spacing pattern and thereby the number of producing wells; second, a critical rate of production and thereby the rate of reservoir pressure decline. Unfortunately, the first is taken care of early in the productive life of an oil or gas field—and usually a spacing pattern is set that is not fitted to the efficient and proper depletion of the reservoir, but once set is rarely changed. That leaves only the second factor—rate of production of oil and gas—and is about the only tool left in the box with which to work.

We have talked at length on the production of oil and gas as the rate factor in the Rodessa field. Now, about gas-oil ratio, which naturally is included in rate, but is important as a separate item. But first, let us clear up the term "gas-oil ratio."

Gas-oil ratio has been under the gun in controlled production intensively since the summer of 1936, when Col. Ernest O. Thompson, then chairman of the Texas Railroad Commission, tired of too much bickering over gas-oil ratio testimony offered at commission hearings, launched the engineers of the oil and gas division upon a gas-oil ratio survey to cover approximately 50,000 oil wells. Aside from almost breaking the backs of 40 engineers, enough data was obtained to awaken the industry to the value of an efficient gas-oil ratio in the obtaining of larger ultimate recoveries of oil and gas. Since that time, it has become routine in most states to determine the operating gas-oil ratio quarterly, and in the Rodessa field monthly.

Gas-oil ratio has been and is being used as a compensating factor in the scheme of proration by all three states operating Rodessa. That is, after determining the volume of gas produced incident to the production of oil under standards set by statute and expressing this finding as cubic feet of gas to the barrel of oil produced (gas-oil ratio), ingenuity is rewarded by increased allowable and laxness penalized by decreased allowable. Now, that is as far as we need go in a field operating placidly under the blessing of an effective hydrostatic head of water. However, through the period covered by this discussion, the Rodessa field has depended almost entirely upon the force of expanding gas to lift the reservoir fluid to the surface. Perhaps the hydrostatic head of water necessary to move the oil into the well bore is potentially present, but the withdrawal rate, for economic and other reasons, has not been timed to its movement through the reservoir. That being the case, the reliable and true index of producing efficiency for the reservoir in its entirety is the maximum recovery of oil per pound pressure decline with the minimum gas-oil ratio.

Empirical data, obtained through a study of gas-oil ratios, has proven, at least to me, that as production restriction is applied to wells in gas-drive fields, very high ratio wells will produce at increasingly better gas-oil ratios down to some optimum condition, and when the production is restricted below that point, the gas-oil ratio will increase usually very rapidly, and wells producing at low rates in gas drive fields will respond conversely. Intermittent flow to obtain allowables is necessary. There are some wells which, due to their position on the structure or mode of completion, will not conform to the rule, and should be dealt with separately. Then, if this be true of wells, it must be true of reservoirs. If we are trying to obtain the maximum recovery with the minimum gas-oil ratio in fields depending upon gas as the prime mover, we may have to sacrifice some decline in reservoir pressure to obtain a practical solution to this operating problem. My opinion is that this fact has not been given sufficient consideration at Rodessa.

Much has been said concerning the position of the manufacturer of natural gasoline and carbon black in the finding and keeping of efficient and optimum gas-oil ratios in fields having gasoline and carbon black plants. The contention has always been that with the advent of these plants, gas-oil ratios increased due to the desire of the operator of oil wells to obtain added revenue by the sale of casing-head gas. My experience has been different in that there is no change in existing gas-oil ratios but rather due to the actual metering of all gas as it is purchased by the gasoline manufacturer, and the availability of these meter charts, the true ratio of gas to oil produced manifests itself. The supreme object of the oil operator is still the production of oil.

Arkansas, Louisiana and Texas are fortunate in having gasoline plants in each of their parts of Rodessa. These plants have been of inestimable value in obtaining correct determinations of existing operating gas-oil ratios. There is a practice among operators, however, notably in Texas, to produce and deliver that amount of gas to the gasoline plant which his oil allowable entitles him to produce and then close the connection and divert and waste the balance of the gas necessary to actually produce his oil allowable. This practice makes it virtually impossible for the regulatory body to be conversant with the actual volume of gas necessary to lift oil efficiently. Despite the shudders of the gas pipe line companies, there is only one way to discover the actual ratio — increase it.

The foregoing is applicable to gas pipe line companies and the gas delivered to them is all utilized. More revenue is obtained if the incidental gas or casinghead gas is disposed of to a gas utility than if it is disposed of to a gasoline plant and only the gasoline content of the gas recovered without a residue market—provided, of course, that the gas utility pays the going price for dry natural

gas. Controlled production wise, the sale of gas that is effectively measured, regardless of to whom it is sold, serves the same purpose.

We started out to tell what happened to Arkansas' Rodessa and why it happened. The comparative data which has been given illustrates the following:

The rates of flow were too high and nonratable and the wells were spaced too densely.

A better argument for wide spacing and low rates of flow cannot be found, when fact and not theory is desired, than the Rodessa extension in Arkansas.

By our comparison of the efficiency with which oil was produced in the various states operating Rodessa and the tabulation of gas-oil ratios existing, it is self evident that the rates of flow were too high.

Due to the rapid methods of production, the native reservoir energy inherent in the oil and gas was prematurely depleted without doing useful work—and as a result the ultimate recovery from the reservoir will be lowered drastically.

Due to the nonratable and nonuniform methods of production, oil and gas have been subjected to drainage across property lines, thereby depriving the owners of oil and gas properties upon which no wells have been drilled of their oil and gas. Perhaps that statement needs a lucid explanation.

Drilling Period

We believe there to have been at least 3,500 acres of proven and semiproven land in the Miller County field. At the end of June, 1938, only 90 oil wells and eight gas wells had been drilled. Drilling has ceased except upon forced locations. It is reasonable to expect that a minimum of 350 wells should have been drilled under a 10-acre spacing program. Why were they not drilled? For two reasons: First, the spacing pattern was so small that it was possible to drill only 1,301 acres and under the high rate of flow drain the remaining acreage, and secondly, the production methods were such as to waste the reservoir energy down to the point where it was uneconomical to develop the undeveloped areas.

Perhaps 100 wells would efficiently drain the reservoir. By the pooling of adjacent acreage, the establishment of wide spacing, the adherence to uniform withdrawal to the end that drainage across property lines would be at the irreducible minimum and each well would be allowed to produce and recover oil and gas in due proportion with every other well, and the realization of the greatest ultimate recovery by a rate of production which would take full advantage of native reservoir energy and prolong the flowing life of the field, would have certainly been better for all concerned.

We overlooked the first rule in wise development because the first thing we should know about an oil reservoir is the extent. The quickest way to find out how many owners there are and where the pool extends is by wide well spacing. The quickest way to drain some of the oil and gas from unproven, but probably productive land, is to closely drill that part which is proven. Normal proof of production proceeds from the discovery well outward in all directions until nonproducing wells show the limits. For example, land owned 2 miles from a discovery well can be reached with eight wells under 40-acre spacing, but it will take 16 wells under 20-acre spacing—and by the time it is drilled the land will be suffering from drainage. If it is shown that the producing characteristics of the reservoir can be better satisfied with small spacing, it is much easier to decrease than increase the proration unit.

The pressure differential pattern of Rodessa Arkansas is now hopelessly jumbled. The wells are fast resorting to gas-lift and the pump. The very fact that it requires $50,000 to drill a well, $4,000 to equip for gas-lift, and $11,000 to equip for pumping precludes further development in the field as we know it today. It has served as an expensive object lesson, and only those operators who were in on early development are to show a profit.

Lack of Information

With the discovery of oil in Miller County, the great majority lacked education in the benefits of conservation and controlled production. My file on newspaper clippings during the attempt of the Arkansas Board of Conservation to inaugurate waste preventive measures reflect a rabid distaste for controlled production by the press, which has since been altered considerably. The press at least has discovered, after this experience of listening to the average oil operator, that next to his faith in the belief that his new drilling well will point the way to ultimate success, remorse is the thing he knows best. And there are few records of any effort on his part to voluntarily change his methods of production and behavior; however, he continually dreams of the better worlds in which others of his calling live.

Now, one final chart and we are through with Rodessa. While all the fuss was taking place, and the withdrawals of oil and gas per producing acre were at their zenith, the potentials of the then producing wells were declining sharply, as is shown in Chart 4. From completion data furnished by the operators, we obtained the total oil produced the first 24 hours through a 1-inch aperture (choke) on each well so completed in the field. The average of all the wells each month is represented by the black dot on the chart. The corresponding reservoir pressure is also shown by the circle on the chart. A little study will further prove our previous contentions.

The vast quantities of gas which were and are now being vented to the air, legally because it is incidental gas, properly returned to the oil productive horizon would increase the oil recovery appreciably.

Although prophecy is a hazardous occupation, I predict that Rodessa is the last of the oil and gas reservoirs, of like extent and producing character, in which such energy wastage will be permitted.

And I believe that I am safe in that prediction as far as Arkansas is concerned. Four new reservoirs have been discovered since Rodessa, and three of them are shown on Chart 5. The first two reservoirs shown are depending upon gas as the lifting agent, and the gas-oil ratio is kept at approximately 600 cubic feet. The last field is enjoying the benefit of an active head of water. There are now 26 geophysical highs on record, the first four drilled without a miss, and 16 geophysical crews looking for more. We are going to do all right after all.

Acknowledgments

A report entitled "Rodessa Oil Field," dated December 15, 1937, by F. M. Blair of the engineering staff of the Texas Railroad Commission, was kindly placed at the disposal of the writer and the information it contains was heavily drawn upon.

James E. Halligan, statistical division of the Louisiana Department of Conservation, New Orleans, furnished much of the data concerning his state, as did H. W. Bell, engineer of the Rodessa Operators Committee, Shereport.

West Texas Fields

(Continued from Page 83)

Co. No. 31 Scharbauer, 4,205-48 feet, 1,435 bbls. L. H. Wentz No. 7 Paul Moss, 3,991-4,117 feet, 2,249 bbls.

Gaines County

M.B.K. Drilling Co. No. 2 A. L. Wasson, 4,890-4,990 feet, 1,505 bbls.

Howard County

Pure Oil Co. No. 17 Otis Chalk, 2,881-3,125 feet, 517 bbls.

Pecos County

Childress Realty Co. No. 1 W. T. Shearer, 1,416-55 feet, 337 bbls. Kone Production Co. No. 6 Pecos Valley, 1,565-1,638 feet, 187 bbls. J. D. Kugle, Jr., No. 1 Eaton, 2,050-82 feet, 86 bbls. Superior Oil Co. No. 1 J. W. Potts, dry and abandoned at 2,566 feet.

Reagan County

Culbertson & Irwin No. 1 Nunn, dry and abandoned at 3,457 feet. Thomas & Van Patton No. 1 J. O. Carr, dry and abandoned at 2,803 feet.

Upton County

Webb-Roy Oil Co. No. 3-C Cordova-Union, 2,103-53 feet, 226 bbls.

Ward County

Magnolia Petroleum Co. No. 9-46 Sealy, 2,790-2,850 feet, 367 bbls. Robert E. Mitchell No. 1 D. L. Johnson, 1,908-2,025 feet, 326 bbls. Western Well Service No. 3-E Johnson, 1,927-2,047 feet, 731 bbls.

Winkler County

Gulf Oil Corp. No. 28 Keystone Cattle, 3,265-3,415 feet, 585 bbls. Sid Richardson No. 3 Continental-Jenkins, 3,350-87 feet, 351 bbls.

Yoakum County

Shell Petroleum Corp. No. 4 H. L. Lowe, 4,862-5,062 feet, 540 bbls.; No. 4 Dora Roberts, 4,850-5,164 feet, 326 bbls. Texas Co. No. 1 G. R. White, 4,850-5,100 feet, 224 bbls.

WEST CENTRAL TEXAS COMPLETIONS

(24-hour tests)

Brown County

Grace Eakin No. 1 Williams, dry and abandoned at 1,105 feet. Hightower Oil & Refining Co. No. 5 Mullis, 1,195-1,210 feet, 8 bbls.; No. 1 Payne, dry and abandoned at 1,655 feet. McDonald-Cason No. 1 McDonald, dry and abandoned at 800 feet. Whatley No. 1 Browder, dry and abandoned at 2,462 feet.

Callahan County

Hinkles & Lehnin No. 1 George Lee, dry and abandoned at 422 feet. Morden No. 2 Isenhower, 280-90 feet, 2 bbls.

Eastland County

Hayner & Reeves No. 1 Larkin, 2,629-2,726 feet, 10 bbls. Hickok Production Co. No. 1-C Cleveland, 4,000-50 feet, 129 bbls.

Haskell County

McMillian No. 2 Pardue, 2,842-53 feet, 20 bbls.

Jones County

Humble Oil & Refining Co. No. 14 Hillums, 3,205-18 feet, 700 bbls. Moutray & King No. 2 Pritchard, dry and abandoned at 2,465 feet. Petroleum Production No. 1 McDuff, 1,894-1,912 feet, 291 bbls. Roberts & Choate No. 1 Williamson, 1,878-1,902 feet, 312 bbls.

PANHANDLE FIELD COMPLETIONS

(24-hour tests)

Carson County

Hagy, Harrington & Marsh No. 1 S. D. McElroy, 2,690-2,800 feet, 24,000,000 feet of gas.

Gray County

Cities Service Oil Co. No. 16 I. B. Hughey, 3,178-90 feet, 705 bbls. George Dyer and others No. 1 J. T. Benton, junked and abandoned at 3,060 feet. Lone Star Gas Co. No. 1 J. A. Fowler, 2,145-2,220 feet, 5,000,000 feet of gas; No. 2 Fowler, 2,290-2,589 feet, 4,700,000 feet of gas.

Hutchinson County

Alma Oil Co. No. 4 Whittenburg, 2,915-90 feet, 524 bbls. J. Gordon Burch No. 2 W. E. Herring, 3,092-3,182 feet, 20 bbls. Kewanee Oil Co. No. 37 T. D. Lewis, 2,932-3,002 feet, 256 bbls. Stanolind Oil & Gas Co. No. 11 H. B. Leny, 2,970-3,012 feet, 419 bbls. Harry Steckoll No. 5 Whittenburg C, 2,835-2,933 feet, 109 bbls. Texas Plains Oil Co. No. 7 E. E. Watkins, 3,010-30 feet, 592 bbls.

Wheeler County

Dunaway Brothers No. 2 J. A. Worley, 2,265-2,329 feet, 20 bbls. T. G. Williams No. 1 W. E. Bentley, 2,364-66 feet, 20 bbls.

WILDCAT OPERATIONS

CALIFORNIA

IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

Company, well, location, and county—	S.T.R.	Depth	Status
Shell Oil, No. 1-29 Covarrubias, Capitan, S. Barbara	32- 5-30	1,500	flow 840 b.d.
Hancock-Bush, No. 3 Bradley, S. Maria, S. Barbara	26-10-34	4,935	sd. sh. drlg.
Union Oil, No. 4 Vicente, Santa Maria, Santa Barbara	21-10-34	5,143	sd. sh. drlg.
Union Oil, No. 2 Security, Santa Maria, Santa Barbara	22-10-34	4,681	sd. sh. drlg.
O'Donnell, J. E., No. 1 Helen, Lompoc, Santa Barbara	8- 7-33	4,450	sd. sh. drlg.
Barnsdall Oil, No. 5 Magenheimer, Gato Ridge, S. B.	9- 8-32	3,035	idle
Barnsdall Oil, No. 1 Tezzoni, Gato Ridge, S. Barbara	15- 8-32	2,970	br. sh. drlg.
Petrol Corp., No. 511 Magenheimer, Gato Ridge, S. B.	9- 8-32	4,714	pump 700 b.d.
Oceanic Oil, No. 1 Santa Barbara Mesa, Santa Barbara	28- 4-27	3,678	wet; abd.
Ventura Drlg., No. 1, Ojai, Ventura	10- 3-23	350	cleaning out
Texas Co., No. 5 Yale, South Mountain, Ventura	13- 3-21	6,702	P. B. 4,030
Merchants Pet., No. 1, Sespe, Ventura	1- 4-20	1,123	sd. sh. drlg.
St. Louis Oil, No. 1 Williamson, Sespe, Ventura	1- 4-20	570	cleaning out
Section 20 Oil, No. 1, Sespe, Ventura	20- 5-19	2,180	sd. sh. drlg.
McKinnis, C. R., No. 1, Hopper Canyon, Ventura	14- 4-19	870	sd. sh. drlg.
Texas Co., No. 135 Shiells, Shiells Canyon, Ventura	4- 3-19	3,284	sd. sh. drlg.
Continental Oil, No. 9 Grubb, San Miguelito, Ventura	24- 3-24	6,418	O. S. drlg.
Ridge Oil, No. 1 Fox, Padre Canyon, Ventura	9- 3-24	5,193	sd. sh. drlg.
C. C. M. Oil, No. 7 Oakgrove, Padre Canyon, Ventura	23- 3-24	6,060	gr. sd. drlg.
C. C. M. Oil, No. 23-B Hobson, Rincon, Ventura	8- 3-24	1,651	cleaning out
General Pet., No. 3 Tomson, Rincon, Ventura	8- 3-24	3,453	will redrl.
Richfield Oil, No. 5-F State, Rincon, Ventura	17- 3-24	3,756	sd. sh. drlg.
Tide Water A., No. 111 Lloyd, Ventura Ave., Ventura	27- 3-23	10,260	sd. sh. drlg.
Tide Water A., No. 126 Lloyd, Ventura Ave., Ventura	27- 3-23	3,171	sd. sh. drlg.
Tide Water A., No. 127 Lloyd, Ventura Ave., Ventura	27- 3-23	9,782	sd. sh. drlg.
Tide Water A., No. 134 Lloyd, Ventura Ave., Ventura	27- 3-23	8,378	P. B. 8,295
Tide Water A., No. 7 Hartman, Ventura Ave., Ventura	22- 3-23	8,271	sd. sh. drlg.
Tide Water A., No. 11 McGonigle, Ventura Ave., Vent.	23- 3-23	9,901	hd. sd. drlg.
Shell Oil, No. 96 Taylor, Ventura Ave., Ventura	28- 3-23	7,552	sd. sh. drlg.
Shell Oil, No. 30 Edison, Ventura Ave., Ventura	20- 3-23	7,025	sd. sh. drlg.
Shell Oil, No. 31 Edison, Ventura Ave., Ventura	20- 3-23	8,447	flow 1,830 b.d.
General Pet., No. 16 Barnard, Ventura Ave., Ventura	21- 3-23	5,449	will deepen
Lloyd Corp., No. 2 Dabney-Lloyd, Ventura Ave., Vent.	23- 3-23	5,892	sd. sh. drlg.
Gibson Oil, No. 3 Alferitz, Devils Den, Kern	14-25-18	1,135	br. sh. drlg.
Cal. Lands, Inc., No. 1 Occidental, Lost Hills, Kern	24-26-20	5,218	sd. sh. drlg.
Belridge Oil, No. 27-4, North Belridge, Kern	27-27-20	1,957	sd. sh. drlg.
Belridge Oil, No. 27-13, North Belridge, Kern	27-27-20	7,185	br. sh. drlg.
Belridge Oil, No. 27-19, North Belridge, Kern	27-27-20	5,571	sd. sh. drlg.
Belridge Oil, No. 27-31, North Belridge, Kern	27-27-20	5,484	sd. sh. drlg.
Tide Water A., No. 22-3, North Belridge, Kern	22-27-20	6,775	sd. sh. drlg.
Tide Water A., No. 22, North Belridge, Kern	21-27-20	4,653	sd. sh. drlg.
Crestmont Oil, No. 5 Staley, Round Mountain, Kern	8-28-29	1,087	sd. sh. drlg.
Honolulu Oil, No. 58, Round Mountain, Kern	20-28-29	2,052	pump 75 b.d.
Honolulu Oil, No. 59, Round Mountain, Kern	20-28-29	1,597	sd. sh. drlg.
Helm & Smith, No. 7-A Kernco, Kern River, Kern	34-28-28	675	pump 10 b.d.
Helm & Smith, No. 8-A Kernco, Kern River, Kern	34-28-28	450	O. S. drlg.
Cal. Star Oil, No. 5-80, Kern River, Kern	22-28-27	2,660	pump 101 b.d.
Ring Oil, No. 7 Bowles, Mount Poso, Kern	29-26-28	1,740	idle
Ring Oil, No. 3 Rogers-Jones, Mount Poso, Kern	29-26-28	1,691	idle
Little & Gilstrap, No. 1 Keating, Mount Poso, Kern	20-27-27	2,047	O. S. drlg.
Richfield Oil, No. 1, Union Avenue, Kern	5-30-28	5,712	sd. sh. drlg.
Monterey Expl., No. 3 Nichols, Edison, Kern	14-30-29	1,748	dry; abd.
Western Gulf Oil, No. 4 Price, Fruitvale, Kern	22-29-27	3,870	O. S. drlg.
Western Gulf Oil, No. 39-B, KCL, Fruitvale, Kern	14-29-27	2,076	sd. sh. drlg.
Meridian Oil, No. 5 fee, Fruitvale, Kern	23-29-27	3,150	deepening
Texas Co., No. 1 Lowe, Fruitvale, Kern	7-29-27	10,122	fish D. P.
Greer, P. H., No. 2 Perrel, Mountain View, Kern	9-31-29	6,638	redrlg. 6,321
Renner, G. E., No. 2 R. H. L., Sivert, Kern	27-30-30	591	sd. sh. drlg.
Continental Oil, No. 3-A, KCL, Wasco, Kern	8-27-24	13,766	O. S. drlg.
Continental Oil, No. 1, KCL, Seaboard, Wasco, Kern	26-27-24	12,778	redrlg. 12,377
Standard Oil, No. 8-1-B, KCL, Wasco, Kern	17-27-24	12,792	sd. sh. drlg.
Standard Oil, No. 1 Mushrush, Wasco, Kern	7-27-24	11,590	sd. sh. drlg.
Cal. Lands, Inc., No. 1 Salisbury, Buttonwillow, Kern	7-29-24	3,998	sd. sh. drlg.
Superior Oil, No. 2 Ruhl, Rio Bravo, Kern	1-29-25	9,970	sd. sh. drlg.
Superior Oil, No. 1 Helbling, Rio Bravo, Kern	1-29-25	14,018	tested wet
Union Oil, No. 2-34, KCL, Rio Bravo, Kern	34-28-25	11,204	redrlg. 10,224
Union Oil, No. 5-34, KCL, Rio Bravo, Kern	34-28-25	10,166	sd. sh. drlg.
Union Oil, No. 6-34, KCL, Rio Bravo, Kern	34-28-25	5,783	sd. sh. drlg.
Getty Oil, No. 3 Ramsey, Rio Bravo, Kern	35-28-25	6,760	sd. sh. drlg.
General Pet., No. 4 Wagoner, Rio Bravo, Kern	35-28-25	11,310	sd. sh. drlg.
General Pet., No. 4 Van Ness, Rio Bravo, Kern	2-29-25	6,462	sd. sh. drlg.
Standard Oil, No. 2 Fleishauer, Greeley, Kern	20-29-26	10,581	sd. sh. drlg.
Standard Oil, No. 1 Elrich, Greeley, Kern	20-29-26	4,385	sd. sh. drlg.
Superior Oil, No. 1 Krause, Greeley, Kern	21-29-26	10,660	hd. sh. drlg.
Continental Oil, No. 1 E, KCL, Stevens, Kern	17-30-26	8,574	will redrl.
Shell Oil, No. 83-25-A, KCL, Ten Section, Kern	25-30-25	7,152	sd. sh. drlg.
Shell Oil, No. 47-20-B, KCL, Ten Section, Kern	20-30-26	6,760	sd. sh. drlg.
Shell Oil, No. 67-20-B, KCL, Ten Section, Kern	20-30-26	8,226	flow 95 b.d.
Shell Oil, No. 43-14-A, KCL, Canal, Kern	14-30-25	4,368	sd. sh. drlg.
Shell Oil, No. 87-4-B, KCL, Canal, Kern	4-30-25	2,392	sd. sh. drlg.
Ohio Oil, No. 8-E, KCL, Canal, Kern	14-30-25	8,094	sd. sh. drlg.
Standard Oil, No. 1 Rio Bravo fee, Canal, Kern	12-30-25	7,861	sd. sh. drlg.
Richfield Oil, No. 1, KCL, Tupman, Kern	32-30-25	7,931	sd. sh. drlg.
Ohio Oil, No. 1-F, KCL, Coles Levee, Kern	10-31-25	6,594	sd. sh. drlg.
Ohio Oil, No. 8-A, KCL, Buena Vista Lake, Kern	32-31-26	10,044	salt water
Gibson Oil, No. 3 Blanck, Midway-Sunset, Kern	6-11-23	1,770	sd. sh. drlg.
Lilly Oil, No. 3 Lilly, Midway-Sunset, Kern	36-32-23	1,027	O. S. drlg.
Magnuson, C. A., No. 1 Midway, Midway-Sunset, Kern	19-31-23	3,950	gr. sd. drlg.
Richfield Oil, No. 1, KCL, Wheeler Ridge, Kern	28-11-20	6,796	sd. sh. drlg.
Petrol Corp., No. 33-5 Reserve, Tejon Ranch, Kern	33-11-19	4,607	cleaning out
Pierce, Cyrus, No. 1 Shorb, Panoche, Fresno	16-14-12	780	sd. sh. drlg.
Pure Oil, No. 1, SPL, Huron, Fresno	31-18-17	12,180	gr. sh. drlg.
Magnet Oil, No. 2 Fearon, Fresno	18-19-15	4,808	gr. sh. drlg.
Tide Water A., No. 1-F, North Coalinga, Fresno	1-19-15	4,594	sd. sh. drlg.
Jacalitos Oil Co., No. 1 Jacalitos Hills, Fresno	14-21-15	7,267	dry; abd.
Pet. Sec., No. 7-7-F, East Coalinga, Fresno	7-20-16	6,925	flow 1,450 b.d
Goetz, F., Co., No. 1, East Coalinga, Fresno	10-20-15	6,205	br. sh. drlg.
Standard Oil, No. 82-13-fee, East Coalinga, Fresno	13-20-15	6,270	sd. sh. drlg.
Texas Co., No. 19 Mohawk, East Coalinga, Fresno	12-20-15	4,224	bailed water
Universal Consd. Oil, No. 1, East Coalinga, Fresno	12-20-15	8,071	sd. sh. drlg.
Tide Water A., No. 66 Guardian, E. Coalinga, Fresno	12-20-15	6,285	hd. sd. drlg.
Superior Oil, No. 1 Hight, East Coalinga, Fresno	8-20-15	7,999	flow 958 b.d.
Dauphin Dev., No. 2 Boone, Alcalde, Fresno	30-21-14	2,597	sd. sh drlg.
Stuart Oil, No. 1 Alcalde, Alcalde, Fresno	12-21-14	296	sd. sh. drlg.
Superior Oil, No. 4-H Kettleman North, Fresno	29-21-17	8,600	redrlg. 7,391
K.N.D.A., No. 38-6-Q, Kettleman North, Kings	6-22-18	8,115	gr. sd. drlg.
K.N.D.A., No. 27-8-Q, Kettleman North, Kings	6-22-18	8,250	gr. sd. drlg.
K.N.D.A., No. 58-8-Q, Kettleman North, Kings	8-22-18	8,082	gr. sd. drlg.
K.N.D.A., No. 36-16-Q, Kettleman North, Kings	16-22-18	4,533	sd. sh. drlg.
K.N.D.A., No. 38-16-Q, Kettleman North, Kings	16-22-18	7,651	hd. sd. drlg.
K.N.D.A., No. 43-20-Q, Kettleman North, Kings	20-22-18	8,914	swabbing
K.N.D.A., No. 27-22-Q, Kettleman North, Kings	22-22-18	8,670	cleaning out
Standard Oil, No. 21-13-P, Kettleman North, Kings	13-22-17	7,740	sd. sh. drlg.
Standard Oil, No. 74-7-Q, Kettleman North, Kings	7-22-18	8,985	flow 1,760 b.d.
Standard Oil, No. 41-17-Q, Kettleman North, Kings	17-22-18	5,580	sd. sh. drlg.
Standard Oil, No. 61-21-Q, Kettleman North, Kings	21-22-18	7,296	cmtd. 7,120
Caminol Co., No. 3 Amalgamated, Allensworth, Tulare	29-24-24	9,230	br. sh. drlg.
Texas Co., No. 1 Lewis, King City, Monterey	13-19-5	3,161	br. sh. drlg.
Temblor Range Oil, No. 1 Temblor Rge., S. L. Obispo	22-31-22	3,045	will deepen
Loma Grande Oil, No. 1 Edna, San Luis Obispo	28-31-13	1,497	sd. sh. drlg.
Hancock Oil, No. 1 Dick, Huasna, San Luis Obispo	30-12-33	3,750	rig to pump
Ohio Oil, No. 2 Willard, Willows, Glenn	18-20-2	1,587	sd. sh. drlg.
Amerada Pet., No. 1 California Lands, Colusa, Colusa	34-16-1	7,071	br. sh. drlg.
Richfield Oil, No. 1, Potrero Hills, Solano	10- 4-1	4,374	sd. sh. drlg.
Orestimba Oil, No. 1 S. N., Newman, Stanislaus	12- 7-7	339	sd. sh. drlg.

IMPORTANT WELLS AND SOUTHERN CALIFORNIA WILDCATS

Company, well, location, and county—	S.T.R.	Depth	Status
Sovereign Oil, No. 2 Community, El Segundo, L. Ang.	12- 3-15	7,331	pump 260 b.d.
Sovereign Oil, No. 1 Coppinger, El Segundo, L. Ang.	12- 3-15	7,350	flow 290 b.d.
Rolling Hills Oil, No. 1 Weston, Palos Verdes, L. Ang.	27- 4-14	5,100	O. S. drlg.
Allison & Oglesby, No. 1 Gerner, Torrance, L. Angeles	23- 4-14	5,166	recmtd. 5,166
Alford & Thompson, No. 1 fee, Torrance, Los Angeles	23- 4-14	3,960	redrlg. 2,760
Berseid & Clark, No. 1 Basin, Torrance, Los Angeles	23- 4-14	3,783	will deepen
Blue Bell Pet., No. 1 Simons, Torrance, Los Angeles	23- 4-14	5,271	P. B. 4,880
Coastal Counties Oil, No. 6, Torrance, Los Angeles	23- 4-14	5,090	O. S. drlg.

KEY TO ABBREVIATIONS USED IN DRILLING REPORTS

Abd., abandoned.
Acd., acidized.
B.O., barrels of oil.
B.P.D., barrels per day.
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
Br. sh., brown shale.
B.S., basic sediment.
Cd. or Crd., cored.
C.D., corrected depth.
Cg., coring.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor.
C.P., casing pressure, also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg. or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.&A., dry and abandoned.
Fsg., fishing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Grn. sh., green shale.
Hd. sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
L.D.D., later drilled deeper.
Lnr., liner.
Loc., location.
M.I.M., moving in material.
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., old well drilling deeper
O.W.P.B., old well plugging back
P.B., plugging or plugged back
P.B.P., pulling or pulled big pipe.
P.L., pipe line.
P.L.O., pipe line oil.
Pmpg., pumping.
P.O.P., putting on pump.
P.P., pulled pipe.
Rd. sd., red sand.
Rd. sh., red shale.
Recmt., recemented.
Rmg., reaming.
Redrlg., redrilling.
Rng., running.
R.O.G., rig on ground.
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary.
R.U.S.T., rigging up standard tools.
R.&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sdy. sh., sandy shale.
Sdtr., or St., sidetracking.
S.D.P.L., shut down for pipe line.
S.D.O., or S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.I., shut in.
S.I.P., shut in, prorated.
S.L.M., steel line measurement.
S.O., show oil.
S.O.G.&W., show of oil, gas and water.
Spdg. or Spd., spudding.
S.R., straightreaming.
Stdg., standardizing (also standing).
S.W., salt water.
Swbg., swabbing.
T.A., temporarily abandoned.
Tbg., tubing.
T.D., total depth.
T.P., tubing pressure.
Tr., tract.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C. or W.O.C.S., waiting on cement to set.
W.P., working pressure.
W.S.O., water shutoff.
W.S.S.O.K., water shut off O.K.
W.S.O.N.G., water shutoff no good.
W.S.R. or W.O.S.R., awaiting standard rig.
Wtr., water.

Caldale Oil, No. 1 Lomita, Torrance, Los Angeles	23-	4-14	4,980	pump 130 b.d.
Collier, P. V., No. 1 Smith, Torrance, Los Angeles	23-	4-14	3,605	redrig. 2,576
Consolidated Pet., No. 3, Torrance, Los Angeles	23-	4-14	4,965	flow 280 b.d.
Cal. Star Oil, No. 1 Anderson, Torrance, Los Angeles	23-	4-14	2,500	sd. sh. drlg.
Douglas, A., No. 1 Beaudette, Torrance, Los Angeles	23-	4-14	4,990	sd. sh. drlg.
Dunphy, S. R., No. 1 Lomita, Torrance, Los Angeles	23-	4-14	5,002	pump 190 b.d.
Del Amo Oil, No. 1 Denbo, Torrance, Los Angeles	23-	4-14	4,920	P. B. 4,900
Elexico Oil, No. 4 Airey, Torrance, Los Angeles	23-	4-14	3,387	sd. sh. drlg.
Freeman Oil, No. 1 Lomita, Torrance, Los Angeles	23-	4-14	4,960	bailing
Goetz, R. L., No. 1 Monica, Torrance, Los Angeles	23-	4-14	4,969	flow 360 b.d
H. D. Oil, No. 1 Lomita, Torrance, Los Angeles	23-	4-14	3,807	rigged up
Kenber Oil, No. 1 Berken, Torrance, Los Angeles	23-	4-14	5,000	flow 170 b.d.
Kerben Oil, No. 2 Empire, Torrance, Los Angeles	23-	4-14	4,271	sd. sh. drlg.
Kovell Oil, No. 3 Lomita, Torrance, Los Angeles	22-	4-14	4,965	sd. sh. drlg.
Kovell Oil, No. 4 Lomita, Torrance, Los Angeles	23-	4-14	4,740	sd. sh. drlg.
Louisiana Oil, No. 1 Lord, Torrance, Los Angeles	22-	4-14	3,800	redrig. 2,042
Lebow, C. H., No. 1 Ellis, Torrance, Los Angeles	23-	4-14	3,050	sd. sh. drlg.
Mildon Oil, No. 1 Lomita, Torrance, Los Angeles	23-	4-14	4,980	sd. sh. drlg.
Medill, John, No. 4 Frenger, Torrance, Los Angeles	23-	4-14	3,595	rigged up
McDonald & Burns, No. 11 Moore, Torrance, L. Ang.	23-	4-14	4,161	sd. sh. drlg.
McCaslin, W. E., No. 2 Lomita, Torrance, L. Angeles	14-	4-14	4,993	rig compressor
M. P. S. Oil, No. 1 Julian, Torrance, Los Angeles	23-	4-14	4,999	cleaning out
Moon Oil, No. 2 Julian, Torrance, Los Angeles	23-	4-14	3,787	rigged up
Pacific West. Oil, No. 4 Marble, Torrance, Los Ang.	15-	4-14	4,986	sd. sh. drlg.
Pacific West. Oil, No. 7 Marble, Torrance, Los Ang.	15-	4-14	3,800	will deepen
Pettijohn, J. E., No. 1 Lomita, Torrance, Los Angeles	22-	4-14	4,967	sd. sh. drlg.
Standard Oil, No. 1-14 Marble, Torrance, Los Angeles	22-	4-14	4,831	sd. sh. drlg.
Standard Oil, No. 2-7 Marble, Torrance, Los Angeles	22-	4-14	4,822	sd. sh. drlg.
Standard Oil, No. 2-8 Marble, Torrance, Los Angeles	22-	4-14	3,684	sd. sh. drlg.
Star Pet., No. 1 Patton, Torrance, Los Angeles	23-	4-14	5,280	P. B. 5,145
Sonwell Oil, No. 4, Torrance, Los Angeles	23-	4-14	4,955	pump 55 b.d.
Sunny State Oil, No. 1 Bailes, Torrance, Los Angeles	23-	4-14	4,573	sd. sh. drlg.
Ter Heun Oil, No. 1 Lomita, Torrance, Los Angeles	23-	4-14	4,896	D. P. stuck
Texas Co., No. 11 Wilson, Torrance, Los Angeles	14-	4-14	4,980	bailing
C. C. M. O., No. 8, Torrance, Los Angeles	15-	4-14	4,997	pump 95 b.d.
Caminol Co., Ltd., No. 2-12 Lomita, Harbor City, L. A.	25-	4-14	2,984	sd. sh. drlg.
General Pet., No. 9 Poggi, Harbor City, Los Angeles	30-	4-13	5,280	P. B. 5,185
O'Donnell, J. L., No. 43, Harbor City, Los Angeles	25-	4-14	5,347	sd. sh. drlg.
Macson Oil, No. 1589-1, Harbor City, Los Angeles	25-	4-14	3,493	sd. sh. drlg.
Padran Oil, No. 1 McEwen, Harbor City, Los Angeles	25-	4-14	3,582	sd. sh. drlg.
D & B Oil, No. 2 Dawn, Harbor City, Los Angeles	25-	4-14	5,411	gr. sd. drlg.
Bush Oil, No. 1 Torino, Harbor City, Los Angeles	25-	4-14	1,996	sd. sh. drlg.
Ring Oil, No. 1 Hawkins, Harbor City, Los Angeles	25-	4-14	5,270	O. S. drlg.
Silverado Oil, No. 1, Harbor City, Los Angeles	25-	4-14	4,480	sd. sh. drlg.
Texas Co., No. 1 Oakley, Harbor City, Los Angeles	30-	4-13	4,897	sd. sh. drlg.
Union Oil, No. 61 Callender, Dominguez, Los Angeles	32-	3-13	7,260	sd. sh. drlg.
Shell Oil, No. 95 Reyes, Dominguez, Los Angeles	33-	3-13	8,660	pump 152 b.d
Shell Oil, No. 96 Reyes, Dominguez, Los Angeles	33-	3-13	4,860	O S. drlg.
Stabler, W., No. 2 Marland, Dominguez, Los Angeles	3-	4-13	4,506	will deepen
Selbar Oil, No. 1 Richfield, Dominguez, Los Angeles	3-	4-13	4,248	will redri.
Fairfield, F. E., No. 1 Abel, Rosecrans, Los Angeles	19-	3-13	6,080	sd. sh. drlg.
Exeter Oil, No. 4 Higgins, Rosecrans, Los Angeles	20-	3-13	7,665	O. S. drlg.
Bankline Oil, No. 1 Kirby, Rosecrans, Los Angeles	20-	3-13	6,760	sd. sh. drlg.
Barnsdall Oil, No. 6 Trust, Rosecrans, Los Angeles	18-	3-13	7,298	sd. sh. drlg.
Union Oil, No. 24 Rosecrans, Rosecrans, Los Angeles	19-	3-13	7,655	flow 590 b.d.
Union Oil, No. 25 Rosecrans, Rosecrans, Los Angeles	19-	3-13	7,001	sd. sh. drlg.
Union Oil, No. 26 Rosecrans, Rosecrans, Los Angeles	19-	3-13	5,583	sd. sh. drlg.
Universal Consd., No. 5 Trust, Rosecrans, Los Angeles	18-	3-13	7,960	sd. sh. drlg.
Republic Pet., No. 1 Trust, Rosecrans, Los Angeles	18-	3-13	6,141	redrig. 5,550
Superior Oil, No. 10 Maxwell, Rosecrans, Los Angeles	20-	3-13	7,630	flow 275 b.d.
H. B. Oil, No. 1 Stevens, Rosecrans, Los Angeles	20-	3-13	6,033	redrig. 6,031
Basin Oil, No. 2 Potrero, Los Angeles	34-	2-14	1,587	sd. sh. drlg.
Tide Water A., No. 1 Porter, San Fernando, L. Ang.	27-	3-16	4,225	deepening
Barnsdall Oil, No. 4 R.S.F., Newhall, Los Angeles	26-	4-17	2,186	sd. sh. drlg.
Royal Lands, No. 1 Ramona, Castaic, Los Angeles	8-	4-17	1,098	cleaning out
General Pet., No. 1 Flint, Wilmington, Los Angeles	33-	4-13	3,500	redrig. 3,260
General Pet., No. 19 Harbor, Wilmington, L. Angeles	2-	5-13	3,359	O. S. drlg.
General Pet., No. 20 Harbor, Wilmington, L. Angeles	2-	5-13	1,998	sd. sh. drlg.
General Pet., No. 41 Harbor, Wilmington, L. Angeles	2-	5-13	3,045	rig to pump
Bankline Oil, No. 11-U.P., Wilmington, Los Angeles	2-	5-13	2,681	redrig. 2,352
Hollywood Oil, No. 4 Baxter, Wilmington, L. Angeles	35-	4-13	2,877	sd. sh. drlg.
Ind. Drlg. Co., No. 1 Vosper, Wilmington, Los Angeles	2-	5-13	3,316	sd. sh. drlg.
Richfield Oil, No. 10-P.D., Wilmington, Los Angeles	2-	5-13	3,665	flow 1,128 b.d.
Richfield Oil, No. 12-P.D., Wilmington, Los Angeles	2-	5-13	1,894	sd. sh. drlg.
Richfield Oil, No. 13-P.D., Wilmington, Los Angeles	2-	5-13	1,387	sd. sh. drlg.
Richfield Oil, No. 17-P.D., Wilmington, Los Angeles	2-	5-13	3,022	O. S. drlg.
Richfield Oil, No. 27-P.D., Wilmington, Los Angeles	2-	5-13	2,920	flow 338 b.d.
Richfield Oil, No. 1-G, Wilmington, Los Angeles	35-	4-13	3,340	flow 269 b.d.
Richfield Oil, No. 1 P. & G., Wilmington, Los Angeles	2-	5-13	3,950	flow 635 b.d.
Royalty Service, No. 7-A, Wilmington, Los Angeles	33-	4-13	5,627	flow 330 b.d.
Superior Oil, No. 1 School, Wilmington, Los Angeles	2-	5-13	3,245	O. S. drlg.
So. Cal. Pet., No. 1-W, Wilmington, Los Angeles	33-	4-13	5,700	sd. sh. drlg.
Union Pacific, No. 82, Wilmington, Los Angeles	4-	5-13	3,427	O. S. drlg.
Union Pacific, No. 90, Wilmington, Los Angeles	3-	5-13	3,968	flow 4,344 b.d.
Union Pacific, No. 91, Wilmington, Los Angeles	4-	5-13	4,042	O. S. drlg.
Hogan Pet., No. 1 Burkhart, San Pedro, Los Angeles	7-	5-13	964	sd. sh. drlg.
St. Helens Pet., No. 28 Monterey, Montebello, L. A.	2-	2-12	6,290	recmtd. 6,290
St. Helens Pet., No. 29 Monterey, Montebello, L. A.	2-	2-12	5,587	hd. sd. drlg.
St. Helens Pet., No. 2 Taylor, Montebello, Los Angeles	2-	2-12	3,473	sd. sh. drlg.
Union Oil, No. 1 Howard, Montebello, Los Angeles	2-	2-12	6,244	cleaning out
Union Oil, No. 3 Howard & Smith, Montebello, L. A.	2-	2-12	6,150	sd. sh. drlg.
V-8 Oil, No. 1 Estelle, Montebello, Los Angeles	2-	2-12	6,330	sd. sh. drlg.
Mon. Wesco, Inc., No. 1 Seavers, Montebello, Los Ang.	2-	2-12	6,227	O. S. drlg.
Pongratz Pet., No. 1 Martin, Montebello, Los Angeles	2-	2-12	3,561	sd. sh. drlg.
Standard Oil, No. 3 Harvey, Montebello, Los Ang.	2-	2-12	5,680	sd. sh. drlg.
Standard Oil, No. 3 Braun, Montebello, Los Angeles	2-	2-12	5,370	sd. sh. drlg.
Standard Oil, No. 1 Kaufman, Montebello, Los Ang.	2-	2-12	3,596	sd. sh. drlg.
Mont. Res. Oil, No. 1 M. L. & W., Montebello, L. A.	2-	2-12	4,581	sd. sh. drlg.
Hathaway Oil, No. 1 Dore, Montebello, Los Angeles	2-	2-12	3,290	sd. sh. drlg.
Herley-Kelly, Inc., No. 1 Masser, Montebello, L. Ang.	2-	2-12	6,225	sd. sh. drlg.
Brit.-American Oil, No. 1 Pico, Los Angeles	12-	2-12	4,798	sd. sh. drlg.
Security L. & W., No. 1 Tobey, Whittier, Los Angeles	8-	2-11	2,414	hd. sh. drlg.
Texas Co., No. 2-3 Foster, Long Beach, Los Angeles	19-	4-12	5,000	redrig. 2,945
De Soto Oil, No. 1, Long Beach, Los Angeles	30-	4-12	7,552	sd. sh. drlg.
Texas Co., No. 3 Alamitos, Seal Beach, Orange	3-	5-12	5,225	pump water
Battersby, J. M., No. 1 Carmenita, Orange	21-	3-11	8,332	cmtd. 7,475
D. H. B. Oil, No. 1, Buena Park, Orange	34-	3-11	3,996	sd. sh. drlg.
Standard Oil, No. 3 Bastanchury, W. Coyote, Orange	16-	3-10	5,622	fish D. P.
Shell Oil Co., No. 1 Kiker, Richfield, Orange	21-	3-9	2,692	sd. sh. drlg.
A. V. Oil, No. 1, Costa Mesa, Orange	16-	6-10	4,660	cleaning out
So. Counties Oil, No. 1 Serrano, San Bernardino	22-	2-8	1,299	sd. sh. drlg.
Dauphin Dev., No. 1 Irwin, Ponto, San Diego	16-12-4		440	sd. sh. drlg.

OKLAHOMA

Week Ending September 24

NORTHERN OKLAHOMA

Beckham County

Wagner & Stogner No. 1 McGee, NE NE SE sec. 25-8-22w. O.W.D.D.; T.D. 1,029 ft.; S.G.; S.D.

Caddo County

Texas Co. No. 1 Smith, C NE NW Sec. 2-5-12w. Drlg. 895 ft.

Coal County

Carter et al No. 1 Mote, C E½ SW NW Sec. 19-2-10. Cg. at 7,090 ft.

Comanche County

E. N. Eldridge No. 1 Aetna Life, SW SE SW Sec. 2-1-10w. Drlg. 1,055 ft.
Midnite O. & G. Co. No. 1 Howe, NW NW NW Sec. 20-2n-13w. T.D. 550 ft.; S.D.
Clyde Roach No. 1-A Green, SE SE SW Sec. 2-1-13w. T.D. 765 ft.; abd.

Garfield County

Champlin Ref. Co. No. 1 Boehm, SW SW NE Sec. 4-24-8w. Viola 6,595 ft.; dolo. 6,625 ft.; 1st Wilcox 6,658 ft.; dry; 2nd Wilcox 6,690 ft.; S.I. to bail.
I.T.I.O. No. 1 Kitchin, C SE SE Sec. 17-22-5w. Miss. 6,113 ft.; Chat 6,625 ft.; Hunton 6,661 ft.; drlg. 6,698 ft.

Garvin County

H. R. Hollenbach et al No. 1 Butterly, NE NE SE Sec. 22-1n-1e. 3,218,000 ft. gas; drlg. 3,205 ft.; S.D.; repairs.

Grady County

Carter Oil Co. et al No. 1 Smith C-58, C SE SW Sec. 26-5-8w. Drlg. 2,484 ft.

Hughes County

City of Holdenville No. 1 Fairgrounds, SE SE SE Sec. 13-7-8. S.D. at 1,200 ft.
F. W. Cooper No. 1 Samuel, NW SE NW Sec. 19-16-8. Drlg. 3,730 ft.
Homer Doup et al No. 1 Bond, NE NE SW Sec. 7-7-9. Drlg. 1,915 ft.
Phillips Pet. Co. No. 1 Beeker, NE NW SW Sec. 8-5-10. T.D. 6,283 ft.; P.B. 5,-632 ft.; acd. and swb. 64 B.W. and no oil in 15½ hrs.

Kay County

Louis Blosser No. 1 Rudolph, NE NE SW Sec. 27-29-1w. T.D. 3,536 ft.; S.D. for heavy tools.
Crawford No. 1 Boehl, SE SE NW Sec. 34-27-2w. Drlg. 405 ft.

Kingfisher County

Burton Pet. Corp. No. 1 Zerger, C SE SW Sec. 5-18-6w. T.D. 3,085 ft.; S.D.

Kiowa County

R. L. Emerson No. 1 Handcock, SE SE NE Sec. 26-6-15w. Drlg. 380 ft.
Hughes & Reese No. 1 Fultz, SE SE SE Sec. 10-6-18w. T.D. 1,238 ft.; W.O.C.

Lincoln County

British-American No. 1 Markwell, C E½ E½ NE Sec. 26-12-4. Viola 5,346 ft.; dolo. 5,377 ft.; 1st Wilcox 5,414 ft.; 2nd 5,478 ft.; T.D. 5,512 ft.; D.&A.
Ok-Texas No. 1 Black, SE cor. Sec. 31-16-6. T.D. 3,903 ft.; lost circ.; cmtd. and waiting.

Noble County

H. R. Hollenbach No. 1 Mathews, C SW NW Sec. 9-20-1. Drlg. 4,826 ft.

Oklahoma County

Olson Oil No. 1 L. Vaneck, SE SW NW Sec. 4-12-3w. T.D. 6,776 ft.; P.B. 6,-766 ft.; F. 288 B.O. in 24 hrs.; 2,250,-000 ft. gas; grav. 35; comp.

Pittsburg County

Supreme Oil Corp. No. 1 Hickey, NW SW NW Sec. 4-2-15. T.D. 1,040 ft.; S.D.
Supreme Oil Corp. No. 1 Stevenson, SW SW SE Sec. 27-3-14. T.D. 1,300 ft.; M.I. rotary.

Pontotoc County

Jack Lynch et al No. 1-A Parker, SW SW SE Sec. 17-4-8. T.D. 4,572 ft.; P.B. 4,490 ft.; rip in csg.; P.B. 4,090 ft.; S.D.
H. Z. Moore No. 1 Payne, SE NW SE Sec. 16-4-4. T.D. 997 ft.; S.S.O.; S.D.
Union Dev. Co. No. 1-A Abbott, SW NW NE sec. 34-3-6. T.D. 2,013 ft.; S.D.

Pottawatomie County

Hall & Briscoe No. 1 Merkle, NW NW SE Sec. 32-8-5. Drlg. 3,140 ft.
Geo. L. Pace No. 1 Riley, NE NE SF Sec. 2-9-3. Woodford 4,925 ft.; lost circ. 4,930 ft.
A. D. Spears No. 1 Vinson, SW NW SW Sec. 29-8-5. 1st Wilcox 4,425 ft.; 2nd Wilcox 4,490 ft.; cg. 4,500-06 ft.; to run Schlum.; D.&A.
Summit Drlg. Co. No. 1 Good, C W½ NW SW Sec. 4-11-5. Drlg. 3,700 ft.

Seminole County

Boetcher O. & G. No. 1 Morgan, SE NE NW Sec. 8-5n-7. T.D. 2,622 ft.; D.&A.
Patterson No. 1 Konawa City Park, NW SE NE Sec. 19-6-8. T.D. 2,712 ft.; S.D.O.
Rogers & Rogers No. 1 Robinson, SW SW SE Sec. 36-8-7. T.D. 3,138 ft.; swb. 2 B.O.P.H.; to shoot.

Washita County

Continental Oil Co. No. 1 Proctor, C NW Sec. 28-10-20w. Drlg. 5,966 ft.
L. B. McWhirter No. 1 fee, NW SW SW Sec. 34-8-19w. T.D. 2,172 ft.; drld. up bailer and S.D.

SOUTHERN OKLAHOMA

Atoka County

C. M. Sheldon and Gardner Pet. Co. No. 1 Lee, NE NW SW Sec. 2-4s-10e. Arb. 2,843 ft.; S.D. 3,455 ft.

Choctaw County

Clyde Ross et al No. 1 Hardy, SE SE NW Sec. 21-7s-15. Drlg. 1,015 ft.

Love County

Sinclair Prairie Oil Co. No. 1 Peabody, NE cor. Sec. 35-6s-2w. Drlg. sh. 7,-847 ft.

Stephens County

M. J. Mitchell No. 1 Westfall, SE cor. Sec. 33-2-4w. T.D. 100 ft.; S.D.

Tillman County

Smith No. 2 Hammel, NE NW NW sec. 6-5s-15w. T.D. 2,380 ft.; fsg. D.P.

KANSAS

Week Ending September 24 (Descriptions are East unless marked otherwise)

Barton County

C. L. Carlock and Atlantic Ref. Co. No. 1 Demel, NE NW Sec. 30-17-13w. Drlg. 2,340 ft.
Continental and Sinclair-Prairie No. 1 Pichner, SE NW Sec. 23-16-11w. Drlg. 770 ft.
Long & Johnson No. 1 Eveleigh, SW SW NE Sec. 3-18-14w. Drlg. 1,275 ft.
I. W. Murfin No. 1 Birzer, NE SW Sec. 21-19-11w. Drlg. 400 ft.

Butler County

Pryor & Lockhart No. 1 Lietzke, NE SW NW Sec. 24-28-7. T.D. 2,770 ft.; P.B. 2,767 ft.; blg. 8 B.O. and 3 B.W. P.D.
Fred Phillips No. 1 Hanshaw, NE NE SE Sec. 32-27-3. C.O. at 1,911 ft.
Soloman & Alexander No. 1 Sawyer, SW NW SW Sec. 2-28-7. S.D. 175 ft.
Tide Water No. 1 Stockil, NW NE Sec. 28-23-5. Simp. 2,328 ft.; Arb. 2,384-2,484 ft., T.D.; D.&A.

Cowley County

Barnsdall Oil Co. No. 1 Elliott, NE cor. Sec. 5-31-5. U.R. at 2,158 ft.
Ben Gralapp et al No. 1-A Clark, NW NW NE Sec. 11-31-3e. Drlg. 3,100 ft.
Ben Gralapp and Continental No. 1 Community, NW Sec. 23-32-5. T.D. 650 ft.; S.D.; est. 2,000,000 ft. gas.

Ford County

Sinclair Prairie Oil Co. No. 1 Young, CSL NE sec. 34-27-21w. Viola 5,350 ft.; dolomite at 5,512 ft.; Wilcox 5,-617 ft.; Arb. 5,629 ft.; T.D. 5,930 ft.; P.B. 5,025 ft.; est. 125 B.O.P.D.; 6,-000,000 ft. gas; comp.

Graham County

Duwe & Farris and Atlantic Ref. Co. No. 1 Parker, C SE SW Sec. 29-6s-23w. T.D. 4,097 ft.

Greenwood County

Z. Dunlap et al No. 1 Warren, NW NW SW Sec. 4-28-10. Drlg. 2,000 ft.
Fullerton et al No. 1 Bates, NE SW SE Sec. 32-26-11. Spd. and S.D.; abd.
Ward McGinnis No. 3 Smith, NW NE NE Sec. 10-24-13. Pay 1,662-65 ft.; pmp. 15 B.O.P.D.; comp.

Harvey County

Lanahan Drlg. No. 1 Lagree, SE SE Sec. 4-23-3w. T.D. 280 ft.; S.D.

Kingman County

Bunte Bros. No. 1 Shepard, SE SE SE Sec. 10-27-10w. T.D. 4,529 ft.; P.B. 4,-086 ft.; swbg. 4 B.O.P.H.

McPherson County

Marylyn Oil No. 1 Dixon, NW NE NW Sec. 7-19-2w. U.R. at 2,560 ft.

Marion County

Johnson et al No. 1-A Miltz, SW SW SW Sec. 24-17-4. T.D. 2,175 ft.; S.D.
Harwood Oil Co. No. 1 Kaufman, NW NW SE Sec. 27-17-4. Miss. 2,360 ft.; T.D. 2,465 ft.; S.S.O.&S.W.; D.&A.

Mead County

Cragin, Reeuscher & Turner No. 1

Adams, NW NW SE Sec. 22-34-30w. T.D. 200 ft.; R.U.R.
Pacific Midwest Oil No. 1 Rexford, NE SE SW Sec. 8-30-29w. S.D. 1,350 ft.

Norton County

Power Oil and Olson Oil No. 1 Noel CEL NE Sec. 12-4-21w. Arb. 3,723 ft.; dolo. 3,738 ft.; T.D. 3,801 ft.; D.&A.

Ottawa County

Babcock Oil No. 1 Copeman, NW NW sec. 18-10-2w. T.D. 2,600 ft.; S.D.

Pottawatomie County

J. A. Turner No. 1 Unshide, C NE NW Sec. 32-8-9. Drlg. 795 ft.

Pratt County

Champlin Ref. Co. No. 1 Elliott, SW NE Sec. 26-27-14w. Fsg. 4,857 ft.

Reno County

A. Scherzer No. 1 Krey, SE SW Sec. 19-23-10w. M.I.M.

Rice County

Glimac Oil Co. No. 1 Malone, SE SW NW Sec. 36-20-10w. Drlg. 930 ft.
Watchorn O. & G. Co. No. 1 Caldwell, NE SE NE Sec. 29-20-9w. Arb. 3,280-90 ft., T.D.; W.I.H.; to P.B. to Simp. at 3,235 ft.

Rooks County

Producers Oil No. 1 Ham, SW NW Sec. 25-7-19w. T.D. 1,800 ft.; abd.
Shindheim & Haynes et al No. 1 Dorr, SE SW Sec. 13-9s-16w. T.D. 3,613 ft.; P.B. to Lansing at 3,247 ft.

Saline County

Sullivan & Sidwell No. 1 Erickson, NE NE Sec. 28-16-3w. S.D. 1,600 ft.

Sedgwick County

D. M. Crowe No. 1 Murphy, SW SE Sec. 34-29-1w. Rng. csg. 993 ft.
Frank Hudson et al No. 1 Fulton, NE SE Sec. 35-28-1e. S.D. 2,355 ft.

Stafford County

Atlantic Ref. Co. No. 1 Wise, NW cor. Sec. 13-24-14w. Simp. 4,121 ft.; Arb. 4,173 ft.; W.O.C. 4,173 ft.
Stanolind O. & G. Co. No. 1 Curtis, SE cor. Sec. 31-21-12w. Viola 3,544 ft.; Arb. 3,638 ft.; R.U.S.T. 3,640 ft.

Sumner County

Cameron & Spencer No. 1 Frey, NW cor. Sec. 5-30-1e. S.D. 90 ft.
Hapenney No. 1 Evers, SE SE Sec. 27-31-2. O.W.D.D.; old T.D. 2,030 ft.; T.D. 2,440 ft.; D.&A.
Vickers Pet. Co. No. 1 Blue, CWL NW NW Sec. 1-33-2w. W.O.C. 550 ft.

Thomas County

Ramsey Pet. Co. and John Mabee No. 1 Ryan, C NE SE Sec. 27-8-32w. Drlg. 4,205 ft.

Wabaunsee County

Fowler & Tague et al No. 1 Aye, NW SW NW Sec. 10-12-8. S.D. 300 ft.

Woodson County

Fleming et al No. 1 Central Life, SW SW SW Sec. 27-24-15. Drlg. 1,443 ft.
M. J. Trott No. 1 Abbott, NW NE NE Sec. 21-25-14e. Drlg. 1,325 ft.

ARKANSAS

Calhoun County

Samuel S. Alexander No. 1 Smythe, C NE NE Sec. 7-11-14. S.D.; boiler rep.; 13 ft.
C. E. Murdock No. 1 Southern Kraft Corp., SE cor. NW NW sec. 17-14-13 Top Nac. 2,371 ft.; report S.G. 2,400 ft.; S.D.

Columbia County

Atlantic Ref. Co. No. 1 Baker-Garrett, C SE NE Sec. 14-17-20. T.D. 123 ft.; abd.; will not drill.
Standard Oil Co. of La. No. 1 T. Crumpler, Sec. 15-17-19. Perf. 7,438-40 ft.; set retainer 7,435 ft.; circulated mud 2 hrs. and pmpd. 160 sacks cmt.; T.D. 7,500 ft.; ran tbg. 7,400 ft.; washed with wtr.; fsg.
Standard Oil Co. of La. No. 2 J. L. Warren, Sec. 18-16-22. Top Buckner 6,975 ft.; 6-in. csg. 7,218 ft.; W.O.C.
Tide Water Seaboard No. 1 Beene, C SE NW Sec. 15-16-19. Top Nac. 1,973-91 ft.; drlg. sh. 2,178 ft.
G. H. Vaughn No. 2 Garrett, C SE SE Sec. 14-17-20. Set 9⅝-in. csg. 2,135 ft.

Craighead County

Tannark, Inc., No. 1 Ruby M. Martin, 380 ft. N line, 80 ft. E line, sec. 35-14n-3e. M.I.C.T. 1,754 ft.

Crittendon County

Manning & Martin No. 1 Cartwright, SW cor. Sec. 16-7n-8e. T.D. 4,208 ft.; D.&A.
Stanley Oil Corp. No. 1 Danner hrs., O.W.W.O.; old T.D. 2,790 ft.; rng. 4-in. csg. to set on bttm.; will use 1 ft. perf. csg. 3,219-3,176 ft.; T.D. 3,-351 ft.; acdz. and swbd. S.W.; abd.

Little River County

Barbee et al No. 1 Ada Mills, SE cor. SW NW Sec. 18-12-29. R.U.
Clark et all No. 1 Strawn, SW cor. SE Sec. 20-10-32. 10-in. csg. 63 ft.
Joe G. Straham et al No. 2 Dierks Lbr. Co. Top L. 2,425 ft.; S.D. 3,354 ft.

Lonoke County

Cabot Drlg. Club, Inc., No. 1 Benson Townsite, Sec. 18-4n-9w. Set 4½-in. csg. on pkr. 1,540 ft.; S.D. 2,330 ft.
J. W. Eddington No. 1 Anderson. Drlg. sd. 900 ft.
J. F. Hudson et al No. 1 T. Young, C NW NW Sec. 8-3n-7w. Set 10-in. csg. 150 ft.; W.O.C.
J. F. Russell No. 1 J. T. Gunter, SE cor. Sec. 17-5-10. S.D. 1,620 ft.

Miller County—Rodessa

Chamblee & Pitts No. 1 H. C. Mitchell, 330 ft. SE cor. E½ SW SE Sec. 2-20-5. Drlg. anhy.&sh. 5,902 ft.
Gerhig Co. No. 3 Mitchell, SW cor. SW SE Sec. 2-20-28. Drlg. sh.&shlls. 4,537 ft.
Red River Valley Oil Co. No. 1 Beck, Sec. 34-15-26. T.D. 3,008 ft.; reperf. 2,786-2,808 ft.; reset pkr. 2,954 ft.; recmtd.; perf. to cut off S.W. 3,006 ft.

Mississippi County

Benedum & Trees Oil Co. No. 1 Mack, 330 ft. SW cor. NW SW Sec. 2-15n-12e. Drlg. stky. sh. 2,046 ft.

Nevada County

Paul D. Bowlen No. 1 Stocks, C NW SE Sec. 9-15s-22w. Nac. sd. 1,178-1,211 ft.; cd. sd. showed sat.; T.D. 3,654 ft.; P.B. 1,300 ft.; perf. 1,197-1,203 ft.; bailed 25 B.P.D. fluid, 85% 12-grav. oil and 15% S.W.; comp.; pmp. est. 60 B.P.D. oil and 290 B.P.D. S.W.; T. D. 1,300 ft.

Pulaski County

Coker Oil Corp. No. 1 Stone, Sec. 36-3n-11w. S.D. 905 ft.
A. L. Kitselman No. 2 A. L. Kitselman, Jr., SE SE SW Sec. 2-1s-13e. Drlg. hd. slate 3,542 ft.

Union County—Schuler

Atlantic Ref. Co. No. 2 Dumas, SE cor. NE NW Sec. 21-18-17. Top Jones sd. 7,608 ft.; set 7-in. csg. 7,642 ft.; T.D. 7,644 ft.
Crescent Drlg. Co. No. 1 Sewell, SW cor. NE NE Sec. 12-18-18. Set 13⅜-in. csg. 116 ft.; drlg. rd. sdy. sh. 6,-310 ft.
Delta Drlg. Co. No. 1 Powledge, SW cor. NW NW Sec. 21-18-17. Drlg. rd. &gr. sh. 3,451 ft.
E. M. Jones No. 1 Gallagher, Lot 4, NW SW Sec. 18-18-17. O.W.W.O.; old T.D. 5,929 ft.; cd. top Jones sd. 7,583 ft.; cd. to 7,634 ft.; drlg. to 7,660 ft.; set 7-in. csg. 7,646 ft.; T.D. 7,660 ft. comp.; 320 B.P.D.; ½-in. ck.; perf. 7,-590-7,610 ft.; T.P. 325 lbs.; C.P. 925 lbs.
E. M. Jones No. 1-B Murphy Ld. Co., Sec. 13-18-18. O.W.W.O.; old T.D. 5,-987 ft.; drlg. rd. sdy. sh. 7,082 ft.
E. M. Jones No. 2-B Murphy Ld. Co., SW cor. S½ NE NE Sec. 13-18-18. Set 16-in. csg. 139 ft.
Lion Oil Ref. Co. No. 2 Clarence, Lot 1, SW Sec. 7-18-17. Top Jones sd. 7,-617 ft.; T.D. 7,700 ft.; 7-in. 7,690 ft.
Lion Oil Ref. Co. No. 2 Dee, SW cor. SE NW Sec. 17-18-17. Top Jones sd. 7,560 ft.; T.D. 7,640 ft.; set 7-in. csg. 7,629 ft.
Lion Oil Ref. Co. No. 8 Hardy Murphy, C NE NW Sec. 9-16-15. Drlg. 1,082 ft.
Lion Oil Ref. Co. No. 1 Henry, SE cor. Sec. 12-18-18. Drlg. 3,620 ft.
Lion Oil Ref. No. 4 Marine, NE cor. SE SE Sec. 17-18-17. Drlg. rd. sdy. sh. 6,-735 ft.
Lion Oil Ref. Co. No. 5 Marine, SE cor. NE SE Sec. 17-18-17. Drlg. rd.&gr. sh. 6,110 ft.
Lion Oil Ref. Co. No. 6 Mayfield, NW cor. Lot 3, NW Sec. 18-18-17. 10¾-in. csg. 1,936 ft.; W.O.C.
Lion Oil Ref. No. 6-A Morgan, SE cor. Lot 1, SW Sec. 18-18-17. Top Jones sd. 7,504 ft.; top L. 7,608 ft.; rng. csg. 7,674 ft.
Lion Oil Ref. Co. No. 1 Powledge, SE cor., Lot 2, SW Sec. 7-18-17. Drlg. rd. &gr. sh. 4,645 ft.
Lion Oil Ref. Co. No. 2 Sewell, NE cor. Sec. 13-18-18. Set 10¾-in. csg. 1,916 ft.
Marine Oil Co. No. 2 J. H. Calloway, NW cor. E½ NE NE Sec. 13-18-18. Set 16-in. csg. 142 ft.; drlg. rd.&gr. sh. 6,563 ft.
Phillips Pet. Co. No. 1-B Bryan, NW cor. NE SE Sec. 13-18-18. Drlg. rd.& gr. sh. 5,934 ft.
Phillips Pet. Co. No. 1 El Dorado Bnk., SW cor. NW SE Sec. 12-18-18. 10¾-in. csg. 1,717 ft.; drlg. rd.&gr. sh. 4,-798 ft.
Phillips Pet. Co. No. 1 Edwards, SW NE Sec. 17-18-17. Drlg. 1,730 ft.
Phillips Pet. Co. No. 2 Gan, NE cor. SE NE Sec. 18-18-17. Drlg. rd. sdy. sh. 7,394 ft.
Phillips Pet. Co. No. 2 Goodwin, Lot 1, NE Sec. 19-18-17. Drlg. 3,354 ft.
Phillips Pet. Co. No. 1 Milling, SE cor. SW Sec. 7-18-17. Drlg. rd.&gr. sh. 3,-609 ft.; (cor.).
Phillips Pet. Co. No. 1 Murphy, Lot 2, NW Sec. 19-18-17. Drlg. 1,207 ft.
Phillips Pet. Co. No. 1 Nelson, Lot 3, NW Sec. 19-18-17. Drlg. 743 ft.
Phillips Pet. Co. No. 2 Sewell, Lot 3, SW Sec. 7-18-17. Drlg. rd. sdy. sh. 7,-052 ft.
Phillips Pet. Co. No. 3 Sewell, Lot 5, SW Sec. 7-18-17. Drlg. rd. sdy. sh. 7,-060 ft.
Phillips Pet. Co. No. 4 Sewell, Lot 4, SW Sec. 7-18-17. Drlg. rd. sdy. sh. 7,448 ft.
Roberts & Murphy No. 2 Leona, NW cor. Lot 6, SW Sec. 7-18-17. Top Jones sd. 7,586 ft.; top L. 7,683 ft.; T.D. 7,780 ft.; set 7-in. csg. 7,774 ft.; perf. 7,610-36 ft.; prep. to test.

Union County—Other

J. R. Lockhart No. 1 Raulston, Sec. 12-17-14. Cd. oil sd. 3,160-75 ft.; D.S.T. 3,172-75 ft.; rec. drlg. fluid and S.W.; cd. 3,175-85 ft.; S.O.; salty taste; set 7-in. csg. 3,077 ft.; perf. 3,002-07 ft.; tstd. 2,750 ft. S.W.; reperf. 2,967-73 ft.; blew wild; est. 500 bbls. S.W.; P.B. 2,700 ft.; drld. out cmt. 2,980 ft.; perf. 2,968-76 ft.; set pkr. 2,960 ft.; tstd. 1,500,000 ft. gas; S.D. 2,980 ft.
J. R. Lockhart No. 2 Rauiston, NE cor. SE Sec. 12-17-14. Cd. 6 ft. sat. sd. 2,-985-96 ft.; D.S.T. 2,976-96 ft.; tstd. hole full oil and 40 ft. mud in 15 min.; W.P. 90 lbs.; set 7-in. csg. 2,975 ft.; tstg.; T.D. 2,996 ft.

LOUISIANA

N. LOUISIANA WILDCATS

Bienville Parish

Ark.-La. Gas Co. No. 1-B Davis Bros. Lbr. Co., NW SW Sec. 7-16-4. 13⅜-in. csg. 275 ft.; T.D. 290 ft.
DeSoto O. & G. Co. No. 1 Fleming, C NW NW Sec. 18-16-9. T.D. 5,525 ft.; 7-in. csg. 5,390 ft.; tstd. est. 40,000,-000 ft. gas; W.O. 5,525 ft.
Producers O. & G. Co. No. 1 Graves & Thomas, SE cor. SW SE Sec. 23-15-10. R.U.

Bossier Parish

W. M. Chambers No. 1 Thomas, SE cor. Sec. 10-22-11. Drlg. sh. 2,475 ft.
C. H. French No. 1 Weaver, sec. 14-19-11. W.O.C. 377 ft.
Premier Inv. Co. No. 3 Buckelew, SE cor. NE Sec. 16-19-11. Set 6⅝-in. csg. 351 ft.; tstg. 417 ft.
Premier Inv. Co. No. 1 Community Corp., sec. 22-19-11. S.D. 310 ft.
Premier Inv. Co. No. 1 McDade, SE SW NE sec. 28-19-11. Tstd. est. 1,000,000 ft. gas; S.I.; T.D. 2,374 ft.; top oolitic L. 2,345 ft.; set 5½-in. csg. 2,300 ft. without cmt.; set 7-in. csg. 2,026 ft. without cmt.; tstd. est. 1,000,000 ft. gas, S.S.O.; W.O.S.R. 2,384 ft.
J. B. Stovall et al No. 2 Ark. Fuel Oil Co. fee, NE SE Sec. 15-19-11. Set 6-in. 168 ft.; W.O.S.R. 372 ft.
J. B. Stovall et al No. 3 Ark. Fuel Oil Co. fee, NE SE Sec. 15-19-11. 6-in. csg. 362 ft.; W.O.C.
Triangle Drlg. Co. No. 2 Roy, C NW SW Sec. 18-17-11. Por. L. 3,118 ft.; set 5½-in. csg. 3,119 ft.; T.D. 3,144 ft.

Caddo Parish

R. E. Allison No. 2 Ellerbee, 708 ft. E line, 1,992 ft. N line, Sec. 28-18-14. Base ch. rk. 1,750 ft.; 9⅝-in. csg. 2,-059 ft.; drlg. L. 4,635 ft.
R. E. Allison No. 1 State, SE cor. Sec. 28-18-14. Drlg. sh. 985 ft.
J. W. Bailey No. 2 Caddo Lvy. Bd., SE cor. Sec. 36-21-16. R.U.
F. W. Burford No. 2 Brown, C SE SE Sec. 5-23-15. Set 5½-in. csg. 6,068 ft.; T.D. 6,087 ft.
R. L. Bauman No. 1 Slattery Est., 660 ft. NW cor. Sec. 35-18-14. Set 13⅜-in. csg. 300 ft.; set 9⅝-in. csg. 2,053 ft.; gas sd. at 2,550 ft. blew out; rng. wild with D.S. in hole; made wtr.; sd. est. 10,000,000 ft. gas; S.I.; D.S. stk. 2,550 ft.
Carney et al No. 1 Hart; O.W.W.O. Old T.D. 2,372 ft.; C.O. and arng. set 6-in. csg. 1,495 ft.
S. H. Cassidy No. 1 Caddo Lve. Bd. Tstd. S.W. 1,661 ft.; W.O.S.R.
W. D. Chew No. 5 Stiles, SW cor. Sec. 27-21-16. 4½-in. csg. 1,800 ft.; T.D. 1,812 ft.
W. D. Chew No. 6 Stiles, SW NE Sec. 28-21-16. Drlg. sh. 1,575 ft.
Paul Cooper et al No. 1 Stiles, SE cor. NE NW Sec. 33-21-16. Drlg. 1,942 ft.
L. L. Davidson No. 3 Muslow, NE SE Sec. 26-21-16. Set 7-in. csg. 2,220 ft.; comp.; 50 B.P.D.; open tbg.; T.D. 2,-253 ft.
Tony DeGrazier No. 1 Welsh, NE cor. Sec. 3-20-16. 7-in. csg. 925 ft.; tstd. dry; S.O.&S.W.; tstg.; T.D. 968 ft.
Falcon Oil Co. No. 2 Glassell-Youree, SE cor. Sec. 26-20-15. Tstd. dry; S.O.&S. W.; will acd.; T.D. 2,306 ft.; W.O.S.R.
M. M. Ferrell No. 1 Dyer. Sec. 10-20-16. Set 6-in. csg. 1,008 ft.; tstd. S.W.; W.O. 1,010 ft.
C. G. Gibbons No. 1 Helpman, SW cor. Sec. 16-21-16. 8-in. 990 ft.; W.O.S.R.; T.D. 1,008 ft.
Gulf Oil Corp. No. 9 Chew, SW NE Sec. 33-21-16. 6-in. 1,806 ft.; T.D. 1,825 ft.; comp.; pmp. 37 B.P.D.
Hollywood Oil Corp. No. 1 C.&B. Realty Co., C NE NE Sec. 22-17-14. R.U.
J. T. Humphrey No. 2 Caddo Lve. Bd Sec. 26-21-16. Tstd. S.W. 1,011 ft.; P. B. 968 ft.; W.O.S.R.
W. C. Knox No. 1 Burton, NW cor. Sec. 7-20-15. S.D. 150 ft.
McClanahan et al No. 1 Muslow, NE NW sec. 31-21-15. Set 10¾-in. csg. 40 ft.; S.D.
E. W. McGoldrick No. 9 Muslow, SW cor. Sec. 32-21-15. W.O.S.R. 1,567 ft.
Manziel et al No. 1 Muslow, NE cor. NW SW Sec. 6-20-15. R.U.
F. W. Martin and Superior Oil Corp No. 1 Querbes, Sec. 8, Reg. Sec. 20 17-13. Set 9⅝-in. csg. 1,252 ft.; drlg. 5,400 ft.
J. Ober & Sons No. 1 fee, SE cor. Sec. 36-21-16. Set 8-in. csg. 1,431 ft.; tstd. dry 1,684 ft.; drlg. 1,755 ft.
Olla, Inc., No. 1 Cazaux, sec. 10-16-13. S.D.; contract depth, 3,500 ft.
Papadokis & Poppas No. 4 Spell, SE cor. Sec. 28-21-15. Set 7-in. csg. 1,380 ft.
J. E. Sedberry No. 1-A Dickinson, SW cor. Sec. 10-19-14. S.D. 2,410 ft.
Southern Star Pet. Corp. No. 2 Muslow, NE cor. SE NW Sec. 17-20-15. Tstg. 2,198 ft.

Caldwell Parish

E. T. Oakes et al No. 1 Kyles, NE cor. SW NE Sec. 18-11-3e. Set 12-in. csg. 467 ft.

Catahoula Parish

Sibley Sabine Oil Co. No. 1 Peck, S½ Sec. 36-10-8e. S.D. sh. 2,008 ft.

Claiborne Parish

Maritzky & Bibby No. 1 McClung, Sec. 29-21-7. S.D.; rep. rig 1,425 ft.
H. O. Olson No. 1 L. L. Lowery. Abd.; will not drill.
Rodessa O. & R. Co. No. 2 Lloyd, C NE SW Sec. 10-20-5. Sat. L. 5,342-45 ft.; T.D. 5,362 ft.; comp.; 11 B.P.H.; 23/64-in. ck.; T.P. 150 lbs.; 5½-in. csg. 5,333 ft.

Concordia Parish

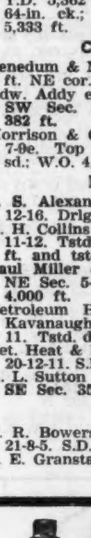
Benedum & McCormick No. 1 Allen, 330 ft. NE cor. Sec. 35-5n-8e. Cg. 4,650 ft.
Edw. Addy et al No. 1 Posternack, NW SW Sec. 49-8n-9e. Arng. D.S.T. 1,-382 ft.
Morrison & Co. No. 1 Winston, Sec. 43-7-9e. Top Wilcox 4,120 ft.; cd. S.W. sd.; W.O. 4,200 ft.

De Soto Parish

S. S. Alexander No. 1-A Stoll, sec. 5-12-16. Drlg. sh.&L. 2,235 ft.
G. H. Collins et al No. 2 Joiner, Sec. 28-11-12. Tstd. S.W. 3,001 ft.; P.B. 2,978 ft. and tstd. S.W.; W.O.
Paul Miller et al No. 2 Jal Drlg. Co., NE Sec. 5-11-11. S.D.; contract depth 4,000 ft.
Petroleum Heat & Power Co. No. 2 Kavanaugh, NE cor. NW SW Sec. 7-11-11. Tstd. dry 2,874 ft.; W.O.
Pet. Heat & Power Co. No. 1 Rives, Sec. 20-12-11. S.D. 3,620 ft.
A. L. Sutton No. 1 Frost Lbr. Co., C NE SE Sec. 35-11-15. R.U. and S.D.

Grant Parish

C. R. Bowers No. 1 Harrison Est., Sec. 21-8-5. S.D. sdy. sh. 1,980 ft.
J. E. Granstaff No. 1 Morrison, NE cor.



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Send for Booklet

McGREGOR WORKING BARREL COMPANY
Bradford, Pa., U.S.A.

SW SW Sec. 10-9-1e. Set 6-in. csg. 1,520 ft.; 8 ft. sd.; T.D. 1,530 ft.; comp.; 15 B.P.D.; heading through open tbg.

La Salle Parish

O. L. Black No. 1 Tullas. Set 6-in. csg. 1,493 ft.; T.D. 1,495 ft.

Madison Parish

Continental Oil Co. No. 1 Singer Mfg. Co., C NE NW Sec. 3-15-11e. Top anhy. 4,003 ft.; drlg. rk. salt 4,254 ft.

Natchitoches Parish

Jos. E. Popkins No. 1 Peavy Lbr. Co., sec. 36-7n-9w. S.D. 510 ft.

Red River Parish

J. M. Forgetson No. 1 Marston, SE SE Sec. 30-14-10. 10-in. csg. 90 ft.

J. F. Lent No. 1 Chicago Coal & Ld. Co., SE cor. Sec. 17-13-11. Drlg. sh., L.&shlls. 2,833 ft.

J. C. Prine No. 2 Haynes, SW cor. Sec. 20-13-10. Set 10-in. csg. 85 ft.; 8¼-in. 1,128 ft.; comp.; pmp. 75 B.P.D.; T.D. 1,398 ft.

J. C. Prine No. 3 Haynes, SW cor. Sec. 20-13-10. T.D. 1,341 ft.; 8-in. csg. 1,284 ft.

H. D. Rogers No. 3 Long Bell Lbr. Co., NE cor. NW Sec. 30-13-19. Drlg. sh. 1,335 ft.

Sabine Parish

Addison & Peterson No. 1 Dew, SE cor. SW SE Sec. 22-8-11. Drlg. ch. rk. 2,410 ft.

A. B. House No. 1 Sabine, NW NW Sec. 23-7-14. 8-in. csg. 2,134 ft.; used 7,000 gal. acd. and tstg.

Hunter Co. No. 7 Bowman-Hicks, C NW NW Sec. 13-7-13. 6-in. csg. 2,121 ft.; 5,000 gal. acd.; tstd. 300 ft. O.I.H.; used 3,000 gal. acd.; W.O.S.R.

LeGrande & Brown No. 1 Tatum, NE cor. NW NE Sec. 17-8-13. Drlg. ch. rk. 1,930 ft.

W. L. McClanahan No. 1 Frost Lbr. Co., Sec. 22-9-13. D.S.T. 2,927-3,028 ft.; tstd. est. 1,000,000 ft. gas and 9 jts. mud; ¼-in. ck.; blew out 4,745 ft.; S.W., mud and gas; cd. hd. sh.&L. 4,745-54 ft.; tstd. S.O. and used 3,000 gal. acd reacd. with 3,000 gal. 1,616 ft.; W.O. S.R.

Major Oil Co. No. 1-B Bowman-Hicks, C NW SW Sec. 8-7-12. R.U.

Major Oil Co. No. 1 Loring, C SE NW Sec. 21-7-13. Top clk. 2,265 ft.; arng. acd. with 8,000 gal.; 8-in. csg. at 2,272 ft.; D.&A. 2,615 ft.

Manitzia et al No. 1 Hale, SE cor. NE SE Sec. 1-7-13. 6-in. csg. 2,081 ft.

North American Oil Consolidated Co. No. 3 Stewart, C SE SE Sec. 29-21-10. Drlg. sh. 1,700 ft.

North American Oil Consolidated Co. No. 3 E. L. Stewart, C SE SE Sec. 29-21-10. R.U.

H. L. Nutting No. 1 4-L Co., C NE NW Sec. 24-7-11. 6-in. 2,665 ft.; T.D. 2,831 ft.; W.O.S.R.

Geo. L. Pace No. 3 Logan Oil Co., SW NW Sec. 26-10-13. 10-in. 98 ft.; drlg. ch. rk. 1,695 ft.

W. L. Posey No. 2 Hale, SE cor. NE NW Sec. 12-7-13. Csg. leaking: set 4-in. 2,177 ft.; 3,000 gal. acd.; comp.; 60 B.P.D.; pmp.; T.D. 2,573 ft.

Richards & Holloway No. 1 Bowman Hicks, Sec. 11-7-13. Tstd. dry 2,404 ft.; acdzd. with 5,000 gal.; tstd. dry; T.D. 2,548 ft.; tstg. 2,548 ft.

Richards & Holloway No. 1 Long Bell, C NW NE Sec. 15-7-13. 10-in. 95 ft.; 5½-in. 2,130 ft.; tstg. 2,392 ft.

Richards & Holloway No. 1 Sabine Lbr. Co., NE NW Sec. 7-7-12. O.W.W.O.; arng. acd. 2,710 ft.; W.O.

C. R. Schuster No. 1 Mary Garcia, NE cor. NW SE Sec. 15-7-13. T.D. 2,603 ft. P.B. 2,585 ft.; tstd. dry S.D.; W.O. 2,585 ft.

H. M. Sneed No. 1 Leone, 330 ft. S line, 400 ft. W line, NW SE Sec. 8-7-13. R.U.

Tropical Oil Co. No. 1 Long Bell Lbr. Co., Sec. 5-8-13. D.S.T. 3,192-3,254 ft.; tstg. 65 ft. mud; S.G. in 10 min.; S.D.; contr. depth, 3,507 ft.; tstd. S.G. 3,204-12 ft.

Lee Whitehurst No. 2 First Natl. Bnk., C SE NW Sec. 14-7-13. R.U.

Zwolle Synd. No. 1 Mansfield Lbr. Co., Sec. 8-7-19. T.D. 4,323 ft.; 5-in. csg. 3,830 ft.; drlg. plug 4,323 ft.; 2,500 gal. acd.; perf. 3,730-70 ft.; blg. to test; old T.D. 4,323 ft.

Webster Parish

Hunt Oil Co. No. 8 Babb, Sec. 13-21-10. Top Bodcaw sd. 8,255 ft.; 7-in. csg. 8,986 ft.; T.D. 9,017 ft.; perf. 8,278-8,302 ft.; tstg. 9,017 ft.

Hunt Oil Co. No. 3 Bodcaw-Stewart, C NW SW Sec. 34-21-10. Holloway sd. 5,822-46 ft.; 9⅝-in. csg. 5,951 ft.; perf. 5,815-50 ft.; tstd. S.O.&G.; C.P. 500 lbs.; T.P. 0 lbs.; reperf. 5,815-50 ft.; tstd. 3,700 ft. O.I.H. and used 500 gal.; swbd. 85 B.P.D.; swbg. to test 3,500 ft. F.I.H.; T.D. 5,956 ft.; flwd. 50 bbls. in 23 hrs. by hds.; open tbg. through perf. 5,830-40 ft.; tstg.

Hunt Oil Co. No. 2 Davis Unit, C NW NW Sec. 24-21-10. Drlg. sh.&L. 5,570 ft.

Hunt Oil Co. No. 10 Davis, C SE SE Sec. 13-21-10. 13⅜-in. csg. 795 ft.

Hunt Oil Co. No. 20 Hope, C NE NW Sec. 24-21-10. Top Holloway sd. 5,596-5,604 ft.; set 9⅝-in. csg. 5,580 ft.; did not test Holloway sd.; top Bodcaw sd. 8,165 ft.; top Davis sd. 8,479 ft.; cutting stk. D.S. 6,118 ft.

Hunt Oil Co. No. 1 Pardee, Sec. 24-21-10. Set 13⅜-in. csg. 797 ft.; top "A" sd. 7,870 ft.; odor and stain of oil; drlg. sh.&L. 8,250 ft.

Hunt Oil Co. No. 1 Sandifer, C NE NE Sec. 4-20-10. No Holloway sd. yet; set 9⅝-in. csg. 5,730 ft.; drlg. sh. 7,281 ft.

Magnolia Pet. Co. No. 1 Merritt Unit, C SW NW Sec. 14-21-10. Top Tr. Pk. 5,715 ft.; no Holloway; 9⅝-in. csg. 5,850 ft.; drlg. sd.&sh. 6,573 ft.

Magnolia Pet. Co. No. 1-C Pardee, C NW NE Sec. 17-23-11. Rmd. and set 9⅝-in. csg. 5,920 ft.; T.D. 6,025 ft.; tstd. dry 6,025 ft.; treated with 5,000 gal. acd. and tstd. S.S.O.&S.W.; mudded up hole; retstd. small S.O. after raising tbg.; cd. 6,025-28 ft.; rec. 1 jt. showed stain and odor oil; tstd. dry sd.; S.G. top Tr. Pk. 6,054 ft.; drlg. sh.&sd. 7,110 ft.

Midstates Oil Corp. No. 1 Welori Lbr. Co. Unit, NE cor. NW Sec. 3-20-10. 9⅝-in. csg. 5,699 ft.; drlg. sh.&L. 6,388 ft.

North American Oil Consolidated Co. No. 3 E. L. Stewart, C SE SE Sec. 29-21-10. Drlg. sh. 4,715 ft.

Harry Morgan No. 2-A Hope, C SE SW Sec. 24-21-10. Top "D" sd. 8,056 ft.; cg. 8,057 ft.

Ohio Oil Co. No. 1 W. Cox, Acct. 2, SE cor. SW Sec. 15-21-10. T.D. 5,899 ft.; rng. Schlum.

Oliphant Oil Corp. No. 1 Fred Banks, C SE NW Sec. 2-20-10. Drlg. sh.&L. 5,536 ft.

Oliphant Oil Corp. No. 1-B Stewart, C NW NE Sec. 5-20-10. Top Tr. Pk. 6,117 ft.; Holloway sd. 6,160-67 ft.; 9⅝-in. csg. 5,884 ft.; drlg. sh. 7,611 ft.

Oliphant Oil Corp. No. 2-B Stewart, C NW NW Sec. 4-20-10. Drlg. sh.&L. 5,630 ft.

Standard Oil Co. of La. and Oliphant Oil Corp. No. 1 E. L. Stewart, C SE SE Sec. 32-21-10. O.W.W.O.; P.B. 8,530 ft.; perf. in "D" sd. at 8,512-22 ft.; comp.; 361 bbls. in 11 hrs. on 26/64-in. ck.; T.P. 700 lbs.; C.P. 1,425 lbs.; gas-oil ratio 1,230:1.

Stanolind O. & G. Co. No. 1 Webster Inv. Co., C NE NE Sec. 35-21-10. R.U.

Union Prod. Co. No. 2 Stewart, SW SW Sec. 28-21-10. D.S.T. 5,835-44 ft.; tstd. 1 stand mud, 3 stands oil, and 5 stands brackish wtr.; D.S. stk. 5,915 ft.

Woodley Pet. Co. No. 1 Couch, C NW SW Sec. 36-21-10. R.U.

SOUTH LOUISIANA FIELDS

Abbeville—Vermilion Parish

Continental Oil Co. No. 1 Clody-Primeaux, Sec. 65-12s-3e. Loc.

Continental Oil Co. No. 1 Franciol, Sec. 67-12s-3e. Drk.

Bateman Lake—St. Mary Parish

Texas Co. No. 1 Wax Bayou, Sec. 21-16s-12e. Drlg. sh.&L. 10,552 ft.

Baton Rouge—East Baton Rouge Parish

Wm. Helis No. 1 Harry Nelson, Sec. 36-7s-1w. Cd. oil sd. 6,477-6,500 ft.; T.D. 7,710 ft.; D.P. stk.; P.B.; sdtrkd.; T.D. 6,480 ft.; 7-in. csg. 6,422 ft.; I.P. 590 bbls. first 23½ hrs.; ¼-in. ck.

Bay St. Elaine—Terrebonne Parish

Texas Co. No. 4 State-Bay St. Elaine, Sec. 19-23s-20e. T.D. 6,811 ft.; rmg.

Bayou Blue—Iberville Parish

Humble O. & R. Co. No. 8 Wilberts, Sec. 66-9s-11e. Drlg. sd. 4,974 ft.

Bayou Choctaw—West Baton Rouge

La. Crusader Oil Co. No. 3 Schwing, Sec. 29-8s-11e. Drlg. sh. 8,298 ft.

Standard Oil Co. et al No. 1 Marley Cypress Co., Sec. 29-8s-11e. Drlg. sh. 8,112 ft.

Bayou Des Allemands—St. Charles Parish

Amerada Pet. Corp. No. 1 Gheens Realty Co., sec. 56-15s-20e. T.D. 7,021 ft.; D.P. stk.; P.B. to 5,000 ft.; sdtrkd. at 5,000 ft.; drld. to 6,984 ft.; 9⅝-in. csg. 6,982 ft.; cg. sd.&sh. 8,183 ft.

Amerada Pet. Corp. No. 2 St. Charles Ld. Co., sec. 13-15s-20e. T.D. 8,500 ft.; 9⅝-in. csg. 8,518 ft.; top salt 9,294 ft.; T.D. 9,295 ft.; P.B. 8,999 ft.; W. O.C.; set 680 ft. of 5½-in. csg. 8,997 ft.; perf. csg. 8,900-20 ft.; flwd. oil and wash wtr. for 20 hrs.; went dead; pull tbg.

Big Lake—Cameron Parish

Union Sulphur Co. No. 1 Hebert, Sec. 18-12s-8w. T.D. 9,960 ft.; W.O.C.

Caillou Island—Terrebonne Parish

Texas Co. No. 4 State-Terrebonne Bay, Sec. 19-23s-20e. Loc.

Texas Co. No. 5 State, Sec. 19-23s-20e. Drlg. sh. 3,578 ft.

Texas Co. No. 29 State, Sec. 17-23s-20e. Rig.

Texas Co. No. 53 State, Sec. 18-23s-20e. Top salt 5,875 ft.; drlg. salt 5,976 ft.; abd.

Cameron Meadows—Cameron

Burton-Sutton Oil Co. No. 23 School Ld., sec. 16-14s-13w. T.D. 5,786 ft.; 7-in. csg. 5,323 ft.; tstd. S.W.; P.B. to sidetrack; T.D. 2,959 ft.; flwd. oil and sanded up; S.D.

Burton-Sutton Oil Co. No. 26 Sch. Ld., Sec. 16-14s-13w. R.U.

Magnolia Pet. Co. No. 23 Cameron Meadows, sec. 21-14s-13w. Drk.

Charenton—St. Mary Parish

H. J. DeArman No. 1 Oak Lawn Plantation, Sec. 24-13s-10e. T.D. 6,700 ft.; rmg.

Kinsley Oil, Inc., No. 2 Hertel, sec. 21-13s-9e. T.D. 1,133 ft.; 7-in. csg. 1,112 ft.; tstd. S.W.; S.D.

Pan American Prod. Co. No. 9 Veeder, Sec. 11-13s-9e. T.D. 1,841 ft.; 7-in. csg. 1,830 ft.; tstd. S.W.; dpnd. to 1,905 ft.; tstd. S.W.; P.B. 1,836 ft.; I.P. 40 bbls. net oil with 50% S.W.; pmpg.

Pan American Prod. Co. No. 10 Veeder, Sec. 11-13s-9e. Loc.

Creole—Cameron Parish

Superior Oil Co.-Pure Oil Co. No. 3 State-Gulf of Mexico. T.D. 2,458 ft.; rep. rig; driving more piling.

Darrow—Ascension Parish

Humble O. & R. Co. No. 19 Community, Sec. 31-10s-2e. Drlg. sdy. sh. 4,636 ft.

Kiva Oil Co. No. 1 Duplessis, sec. 69-10s-2w. S.D. 2,523 ft.

Dog Lake—Terrebonne Parish

Texas Co. No. 8 State, Sec. 5-22s-16e. Drlg. sh. 2,596 ft.

Fausse Point—Iberia Parish

Texas Co. No. 5 State Lake-Fausse Point, Sec. 35-11s-8e. Driving piling.

Four Isle—Terrebonne Parish

Texas Co. No. 10 State, sec. 24-21s-16e. 9⅝-in. csg. 6,775 ft.; drlg. sdy. sh. 9,423 ft.

Gibson—Terrebonne Parish

Shell Pet. Corp. No. 1 Kuntz, Sec. 40-17s-15e. T.D. 10,752 ft.; P.B. 9,178 ft.; 5-in. csg. 9,178 ft.; tstd. S.W. 9,093-95 ft.; tstg. at 8,880-85 ft.; showed S.W.; P.B. 8,870 ft.; perf. csg. 8,885-88 ft.; make D.S.T.

Garden Island—Plaquemines Parish

Texas Co. No. 28 State, sec. 100-23s-38e. Top salt 6,775 ft.; T.D. 6,777 ft.; salt; 7-in. csg. 5,048 ft.; perf. csg. 4,940-75 ft.; test failed; perf. csg. 4,765-95 ft.; tstd. gas; P.B. 4,274 ft.; perf. csg. 4,210-70 ft.; tstd. S.W.; abd.

Texas Co. No. 30 State, Sec. 38-23s-33e. Drlg. sh. 329 ft.

Grand Bay—Plaquemines Parish

Gulf Ref. Co. No. 2 Grand Prairie Lve., sec. 48-20s-18e (1,320 ft. W of No. 1). T.D. 6,148 ft.; 9⅝-in. csg. 6,125 ft.

Gulf Ref. Co. No. 1 State-QQ, Sec. 6-20s-19e. Loc.

Hackberry—Cameron Parish

Berry Oil Corp. No. 1 Cora E. Lyons, sec. 28-12s-10w (West Hackberry). T.D. 3,535 ft.; 7-in. csg. 3,445 ft.; perf. csg. 3,375-82 ft.; pmpg. 98% S.W.; 60 bbls. fluid.

Darryl Davis No. 1 Bickford, sec. 39-12s-10w. T.D. 2,873 ft.; top sh., L., and brkn. cap; S.O. 2,792 ft.; 5-in. csg. 2,778 ft.; T.D. 2,873 ft.; cleaned hole; set cmt. retainer at 2,765 ft.; drld. out to T.D. 2,877 ft.; tstd. S.W.; T.A.

Gulf Oil Corp. No. 1 Noble, sec. 22-12s-10w. T.D. 3,201 ft.; P.B. 2,830 ft.; W. O.C.; to sdtrk. jnk.; fsg.; P.B. 2,830 ft.; sdtrkd. 1,121 ft.; T.D. 3,215 ft.; 7-in. csg. 3,196 ft.; swbd. dry; pulling screen and lnr.

Stanolind O. & G. Co. No. 12 Carter, Sec. 22-12s-10w. T.D. 3,647 ft.; 7-in. csg. 3,515 ft.

Superior Oil Co. No. 1-C Dorrisse, Sec. 30-12s-10w. Drlg. sh. 6,187 ft.

Texas Co. No. 24-B State, Sec. 12s-9w. T.D. 8,052 ft.; sdtrkd.; T.D. 8,163 ft.; 7-in. csg. 8,050 ft.; perf. csg. 7,903-16 ft.; tstd. S.W.; P.B. 7,780 ft.; perf. csg. 7,763-74 ft.; tstg.

Union Sulphur Co. No. 7 Hanzen, sec. 13-12s-10w. T.D. 4,165 ft.; P.B. 4,010 ft.; W.O.C.

Horseshoe Bayou—St. Mary Parish

Texas Co. No. 2 State, Sec. 37-17s-9e. Drlg. sh.&L. 10,668 ft.

Jeanerette—St. Mary Parish

Herton Oil Co. No. 1-A Roane Sugar Co., Sec. 38-13s-9e. T.D. 10,645 ft.; milling to sdtrk. stk. D.P.; sdtrkd. 10,25[illegible] ft.; S.D. 10,615 ft.; perf. csg. 10,598-10,612 ft.; tstd. S.W.; P.B. 10,514 ft.; perf. csg. 10,466-80 ft.; tried to blow out; no recovery; P.B. 10,526 ft.; perf. csg. 10,516-26 ft.; tstd. 950 lbs. pres. and S.W.

Jefferson Island—Iberia Parish

Texas Co. No. 1 State-Lake Peigneur, Twp. 12s-5e. Top salt 3,642 ft.; base salt 3,741 ft.; drlg. sdy. sh.&L. 6,746 ft.

Jennings—Acadia Parish

F. W. Bennett Oil Corp. No. 1 Grace, Sec. 45-9s-2w. Drlg. sh.&shlls. 3,261 ft.

W. T. Burton No. 6 Roboria, sec. 41-9s-2w. 7-in. csg. 6,721 ft.; fsg. tbg.; T.D. 6,997 ft.; prep. to sdtrk.

Cosmo Pet. Co. No. 1 Jennings-Clement, sec. 46-9s-2w. T.D. 3,552 ft.; sdtrkd.; T.D. 3,581 ft.; fsg.; P.B. 2,035 ft.; W. O.C.

Frio Oil Co. No. 2 Gulf fee, sec. 45-9s-2w (NW flank). 10¾-in. csg. 1,512 ft. T.D. 6,882 ft.; fsg.

Frio Oil Co. No. 1 Iowa-Jennings, Sec. 45-9s-2w. T.D. 6,687 ft.; P.B. 4,300 ft.; T.D. 6,170 ft.; twisted off drill collar; fsg.; sdtrkd. 5,550 ft.; drlg. sdy. sh. 7,106 ft.

Frio Oil Co. No. 2 Iowa-Jennings, Sec. 45-9s-2w. Drk.

Glassell & Glassell No. 6 Trushell, sec. 42-9s-2w. Drlg. sh. 6,008 ft.

Guaranty Oil Co. No. 1 Rowson & Haber, Sec. 46-9s-2w. T.D. 3,403 ft.; 5-in. csg. 3,403 ft.; perf. csg. 3,385-95 ft.; tstg.

Gulf Oil Corp. No. 40 Arnaudet, sec. 48-9s-2w. T.D. 4,483 ft.; run 9⅝-in. csg.

L. & L. Oil Co. No. 2 Houssiere Latreille, Sec. 47-9s-2w. Drlg. sh.&L. 2,405 ft.

Ladak Oil Co. No. 6 Jennings, Sec. 46-9s-2w. T.D. 1,040 ft.; I.P. 6 bbls. P.L. O. per day.

Ladak Oil Corp. No. 7 Jennings, Sec. 46-9s-2w. R.U.

Pet. Heat & Power Co. No. 1 Iowa-Jennings, sec. 45-9s-2w. T.D. 3,995 ft.; P. B. 1,774 ft.; tstd. S.W.; S.D.

Pet. Heat & Power Co. No. 2 Iowa-Jennings, sec. 45-9s-2w. T.D. 2,167 ft.; P. B. 1,595 ft.; 5½-in. csg. 1,585 ft.; S.D.

Shell Pet. Corp. No. 4 Community, sec. 40-9s-2w. T.D. 6,675 ft.; P.B. 6,459 ft.; perf. csg. 6,320-50 ft., 6,375-6,405 ft.; flwg.; no ga.

Superior Oil Co. No. 4 Clement, sec. 46-9s-2w. T.D. 6,546 ft.; 7-in. csg. 6,494 ft.; flwd. oil; started making gas; killed; sdtrkd. 6,146 ft.; T.D. 6,295 ft.; I.P. 345 B.P.D.; 14/64-in. ck.

Superior Oil Co. No. 8 Jennings-Haywood, Sec. 41-9s-2w. Drlg. sd. 4,583 ft.

Superior Oil Co. No. 15 Leckelt, Sec. 42-9s-2w. Drlg. sh. 3,000 ft.

Three Sands Oil Co. No. 2 Clement, Sec. 46-9s-2w. T.D. 1,736 ft.; 6-in. csg. 1,700 ft.

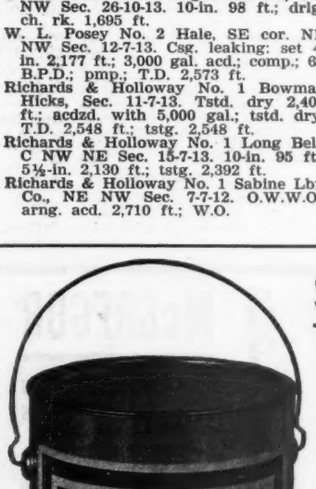
Victor Weisse No. 1 Clement, sec. 46-9s-2w. 6⅝-in. csg. 3,032 ft.; T.D. 3,255 ft.; sdtrkd.; drlg. sh. 3,154 ft.; no report.

Lafitte—Jefferson Parish

Carter-Perrin & Brian No. 1 Lucien Adams, Sec. 9-17s-24e. Drlg. sh. 6,120 ft.

Texas Co. No. 12 LaFitte, Sec. 20-17s-24e. Drlg. sd.&sh. 1,727 ft.

Texas Co. No. 3 Marrero Ld. Co., sec. 29-17s-24e. Drlg. sh.&L.



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Texas Co. No. 10 Rigolet Cooperative Fur. Co., Sec. 28-17s-24e. Drlg. sh. 9,601 ft.

Lake Barre—Terrebonne Parish

Texas Co. No. 42 State-Lake, sec. 40-21s-19e. Top salt 11,301 ft.; drlg. salt 11,316 ft.

Lake Pelto—Terrebonne Parish

Texas Co. No. 21 State, sec. 8-23s-18e. T.D. 6,058 ft.; P.B. and sdtrkd.; T.D. 5,761 ft.; PB. 5,536 ft.; to sdtrk.; T.D. 6,048 ft.; P.B. and sdtrkd. 5,100 ft.; T.D. 6,041 ft.; P.B.; sdtrkd.; drlg. sdy. sh. 4,861 ft.

Texas Co. No. 22 State, Sec. 8-23s-18e. Bldg. drk.

Lake Hermitage—Plaquemines Parish

Gulf Ref. Co. No. 8 Lafourche, sec. 11-18s-25e. Drlg. hd. sh. 2,664 ft.; 10¾-in. csg. 967 ft.; top salt 4,329 ft.; T. D. 4,397 ft., salt; abd.

Leesville—Lafourche Parish

Wm. Helis No. 1-A City of New Orleans, Sec. 35-21s-22e. Drlg. sdy. sh. 8,619 ft.

Texas Co. No. 7 Leeville, sec. 27-21s-22e. S.D. 7,190 ft.

Lirette—Terrebonne Parish

Humble O. & R. Co. No. 1 Robert Verret, Sec. 32-19s-19e. Drlg. hd. sd.&gvl. 1,876 ft.; 20-in. csg. 296 ft.; 13⅜-in. csg. 3,164 ft.; cd. oil sd. 8,463-65 ft 9⅝-in. csg. 9,056 ft.; drlg. sh. 10,670 ft.

Lockport—Calcasieu Parish

La. Crusader Oil Co. No. 1 Milam Stieker, sec. 6-10s-9w. Drlg. sh. 1,828 ft.; 10¾-in. csg. 1,028 ft.; T.D. 7,536 ft. (cor.); abd.

Magnolia Pet. Co. No. 23 Miller, Sec. 9-10s-9w. T.D. 7,952 ft.; P.B. 6,774 ft.; tstd. S.W.; P.B. 4,363 ft.; perf. csg. 4,355-58 ft.; make D.S.T.

T. C. Markley No. 1 Farquhar (offset Continental No. 1 J. H. Moss). Drlg. sh. 5,737 ft.

Lake Long—Lafourche Parish

Fohs Oil Co. No. 5 State-Lake Long, Sec. 64-17s-19e. Drlg. sh. 2,764 ft.; 13⅜-in. csg. 2,761 ft.; 9⅝-in. csg.; T.D. 9,398 ft.; oil sd. 9,342-98 ft.; cd. sd. S.O. &G. 10,228-37 ft., T.D.; S.D.

New Iberia—Iberia Parish

H. Fotiades No. 7 Gulf Ld., Sec. 25-12s-7e. Drk.

Wm. Helis No. 6 Schwing, Sec. 56-12s-7e. Salt 3,949-50 ft.; P.B. 1,850 ft.; T.D. 3,938 ft.; trying to sdtrk. at 3,872 ft.; T.D. 5,352 ft.; sdtrkd.; cg. oil sd. 4,919 ft.

Texas Co. No. 5 Bryant, Sec. 25-12s-7e. Drk.

Texas Co. No. 2 Clemente Hebert, sec 25-12s-7e. 10¾-in. csg. 844 ft.; T.D. 4,555 ft.; 7-in. csg. 4,543 ft.

Texas Co. No. 8 Duke, Sec. 26-12s-7e. Cg. oil sd. 5,851 ft.

Texas Co. No. 1 Gonsoulin, Sec. 13-12s-7e. Drlg. sdy. sh. 2,769 ft.

North Crowley—Acadia Parish

Humble O. &. R. Co. No. 1 H. J. Thevis, Sec. 34-8s-1e. T.D. 7,198 ft.; 7-in. csg. 7,193 ft.; I.P. 458 B.P.D.; ¾-in. ck.

Port Barre—St. Landry Parish

Pan American Prod. Co. No. 3 Garland, Sec. 4-6s-5e. 16-in. csg. 90 ft.; T.D. 5,448 ft.; 7-in. csg. 5,422 ft.; oil sd. 5,428-46 ft.; flwg.; no ga.

Pan American Prod. Co. No. 1 Rene Nezal. Drk.

Y. D. Spill No. 1 Gaudet, sec. 4-6s-5e. T.D. 4,446 ft.; rmg.

Quarantine Bay—Plaquemines Parish

Gulf Oil Corp. No. 1-A Orleans Levee Bd., Sec. 18-19s-17e. T.D. 8,189 ft.; recovered 540 ft. oil, 30 lbs. press.; D. S.T. 8,175-89 ft.

Gulf Ref. Co. No. 4 State, Sec. 17-19s-17e. T.D. 11,014 ft.; P.B. 10,978 ft.; tstd. S.W.; P.B. 10,780 ft.; perf. csg. 10,745-60 ft.; made sqze. job 10,060-70 ft.; perf. csg. 9,685-90 ft.; tstd. S.W.; P.B. 8,921 ft.; perf. csg. 8,994-9,006 ft.; tstd. S.W.; perf. csg. 8,992-97 ft.; tstd. S.W.; made sqz. job; W.O.C.

Gulf Ref. Co. No. 5 State, Sec. 17-19s-17e. Loc.

Gulf Ref. Co. No. 6 State, Sec. 17-19s-17e. Driving piling.

Raceland—Lafourche Parish

Amerada Pet. Corp. No. 1 Godchaux Sugars, Inc., Sec. 34-15s-19e. 18⅝-in. csg. 262 ft.; T.D. 11,312 ft.; 7-in. csg. 11,312 ft.; S.D.

Amerada Pet. Corp. No. 2 South Coast Corp., Sec. 35-15s-19e. T.D. 12,200 ft.; 4¾-in. csg. 10,189 ft.; P.B. 12,164 ft.; perf. csg. 12,049-12,120 ft.; tstg.

Tide Water Oil Co. No. 1-A South Corp., Sec. 34-15s-19e. T.D. sh. 3,937 ft.

Sorrento—Ascension Parish

Pan American Prod. Co. No. 14 United Ld. Co., Sec. 15-10s-4e. T.D. 1,311 ft.; 7-in. csg. 1,285 ft.; tstd. gas; D.D.

Sorrento Pet. Corp. No. 2 White, Sec. 22-10s-4e. S.D. 105 ft.

South Roanoke—Jeff Davis Parish

Continental Oil Co. No. 1 Joe Sturdivant, Sec. 36-10s-4w. Drlg. sh. 12,003 ft.

Lutcher-Moore Co. No. 5 fee, Sec. 19-9s-sec. 23-10s-4w. Sh. 9,736 ft.; cmtd. 7-in. csg. 8,888 ft.; drlg. sh. 10,662 ft.

Starks—Calcasieu Parish

Lutcher-Moore Co. No. 5 fee, sec. 19-9s-12w. T.D. 4,153 ft., salt; P.B. 3,987 ft.; 7-in. csg. 3,827 ft.; bailed dry; S.D. 3,857 ft.

Timbalier Bay—Lafourche Parish

Gulf Oil Corp. No. 4 State, sec. 36-23-21e. T.D. 7,373 ft.; T.D. sdtrkd. hole 6,231 ft.; fsg.; P.B. and sdtrkd. 3,501 ft.; T.D. 6,545 ft.; drld. by jnk. to 6,668 ft.; P.B.; 7-in. csg. 6,651 ft.; top salt 7,224 ft.; T.D. 7,268 ft., salt; P.B. 5,400 ft.; perf. csg. 5,330-40 ft.; tstd. mud; P.B. 5,314 ft.

Valentine—Lafourche Parish

Pan American Prod. Co. No. 1 A. Robichaux, sec. 3-17s-20e. T.D. 5,889 ft.; stk. D.S.; P.B. and sdtrkd. 6,313 ft.; drlg. sh. 6,575 ft.

Venice—Plaquemines Parish

Tide Water Asso. Oil Co. No. 1 Bureas Lve. Bd., Sec. 23-21s-30e. T.D. 7,472 ft.; 7-in. csg. 5,883 ft.

Villa Platte—Evangeline Parish

Continental Oil Co. No. 1 Fontenot, Ludeau-Tate Unit, Sec. 46-3s-2e. Drlg. sh. 7,957 ft.

Continental Oil Co. No. 2 Haas, Sec. 44-3s-2e. R.U.

Continental Oil Co. No. 2 La. Ld. & Imp. Co., Sec. 46-3s-2e. T.D. 9,090 ft.; tstg.

Continental Oil Co. No. 2 Opelousas, St. Landry. Sec. 44-3s-2e. T.D. 9,103 ft.; I.P. 365 B.P.D.; ¾-in. ck.

J. R. Hughes Oil Co. No. 1 J. E. Ortego, Sec. 36-3s-2e. T.D. 9,166 ft.; abd.

Continental Oil Co. No. 2 Tate, Sec. 44-3s-2e. R.U.

Continental Oil Co. No. 2 Vidrine Deville, Sec. 46-3s-2e. R.U.

West Gueydan—Vermilion Parish

Pure Oil Co. No. 1 Vermilion Irrig. Co., Sec. 41-12s-2w. S.D. 7,222 ft.; S.W. sd.

Woodlawn—Jeff Davis Parish

Union Sulphur Co. No. 1 O. Miller, sec. 7-9s-5w. T.D. 8,918 ft.; 7-in. csg. 8,918 ft.; flwd. 380 B.O.P.D.; ¾-in. ck.; started making S.W.; killed.

S. LOUISIANA WILDCATS

Acadia Parish

Atlantic Ref. Co. No. 1 Klumpp, Sec. 12-7s-2w. Drlg. sh. 7,669 ft.

P. D. Freeman No. 2 J. E. Settig, Sec. 17-7s-1w. S.D. 894 ft.

Tri Parish Drillers, Inc., No. 1 Paul Stag, Sec. 4-7s-1w. Drk.

Western Gulf Prod. Co., Sec. 16-10s-1w. Loc.

Avoyelles Parish

Magnolia Pet. Co. No. 1 W. G. Bowden, Sec. 7-2s-4e. Drlg. sh. 5,595 ft.

Beauregard Parish

Humble O. & R. Co. No. 1 Powell Lbr. Co., Sec. 25-3s-8w; (deep core test). R.U.

Calcasieu Parish

Sun Oil Co. No. 2 Lutcher-Moore, sec. 12-8s-13w. T.D. 2,019 ft.; 13⅜-in. csg. 1,996 ft.; drlg. sh. 6,335 ft.

Wheeler Oil Corp. No. 2 Sch. Ld., Sec. 16-9s-7w. 15½-in. csg. 46 ft.; drlg. sdy. sh. 791 ft.

Cameron Parish

Federal Roy. Co. No. 1 State-Calcasieu Lake, Sec. 34-13s-8w. T.D. 1,508 ft.; 7-in. csg. 1,481 ft.

Humble O. & R. Co. No. 2 K. B. Hanzen. 466 ft. S and E. NW cor. SW¼ Sec. 9-12s-6w. Drlg. sh. 11,005 ft.

Pure Oil Co. No. 2 Calcasieu Natl. Bnk., Sec. 18-12s-4w (½ mi. N of No. 1). Drlg. sh. 7,788 ft.

Union Sulphur Co. No. 3 Miami Corp., Sec. 33-12s-8w. (Willow Lake area). Drlg. sh.&L. 9,011 ft.

Concordia Parish

Benedum & McCormick No. 1 L. P. Allen, sec. 35-5n-8e. R.U.

Lafourche Parish

Texas Co. No. 1 La Terre, Sec. 1-20s-21e. T.D. 8,898 ft.; 9⅝-in. csg. 8,898 ft.; drlg. wtr. sd.&L. 10,258 ft.

Texas Co. No. 1 State-Catfish Lake, Sec. 77-19s-21e. Loc.

Orleans Parish

W. T. Burton No. 2-B Faubourg de Montluzin, Sec. 1-10s-13e. Drlg. sh.& L. 6,344 ft.; no report.

W. T. Burton No. 1-B R. E. E. de Montluzin, Sec. 1-10s-13e. Drk.

W. T. Burton No. 1 State-Lake Pontchartrain, Twp. 10s-13e. T.D. 8.367 ft.; P.B. 7,775 ft.; to sdtrk.; no report.

Rapides Parish

J. J. Farrell No. 1 W. P. Aertker, Sec. 16-4n-1e. Drk.

E. F. Kalb et al No. 1 Lee Lbr. Co., Sec. 9-5n-3e. S.D. 140 ft.

St. Bernard Parish

Gulf Ref. Co. No. 4 State-R.R. (Lake Borgne), Twp. 12s-15e. Loc.

St. James Parish

Shell Pet. Corp. No. 1 Shexnayder, Sec. 38-12s-15e. Loc.

St. John the Baptist Parish

Shell Pet. Corp. No. 1 Godchaux, Sec. 97-11s-7e. Drlg. sh. 10,200 ft.

St. Landry Parish

Herton Oil Co. et al No. 1 Thistlephlite Lbr. Co., Sec. 60-4s-4e. Drlg. sh. 8,675 ft.

St. Martin Parish

Shell Pet. Corp. No. 1 Hazel Burdin, Sec. 15-14s-12e. Drlg. sdy. sh. 4,919 ft.

Texas Co. No. 6 State Lake Mongoulois, Sec. 10-10s-9e. Drlg. sh. 8,842 ft.

Texas Co. No. 11 St. Martin Ld. Co., Sec. 21-8s-7e. Top salt 8,904 ft.; T.D. 9,404 ft.; 7-in. csg. 8,912 ft.; fsg. for tbg.

St. Tammany Parish

A. P. Portas No. 1 W. C. Forbes, sec. 33-7s-15e. Drk.

Terrebonne Parish

Shell Pet. Corp. No. 1 Peters, Sec. 73-18s-18e. Drlg. sh. 10,385 ft.

Texas Co. No. 1 Continental Ld. & Fur Co., Sec. 29-18s-14e. 18⅝-in. csg. 101 ft.; drlg. sh.&shils. 5,431 ft.

Vermilion Parish

Desoto Oil Co. No. 1 Richardson, Sec. 30-12s-4e. T.D. 7,065 ft.; abd.

Stanolind O. & G. Co. No. 2 F. Stovall, Sec. 88-14s-3e. R.U.

SOUTH MISSISSIPPI

George County

Ryan & Anderson No. 1 J. J. Newman, Sec. 9-1s-8w. Drlg. sh. 5,984 ft.

Lamar County

South Miss. Pet. Co. No. 1 Pearly Morris, Sec. 4-2n-14w. S.D. 3,023 ft.

TEXAS

Week Ending September 24

GULF COAST FIELDS

Hastings Field—Brazoria County

Humble O. & R. Co. No. 1-G W. F Beers, Perry & Austin Sur. T.D. 6,077 ft.; run csg.

Stanolind O. & G. Co. No. 1-B Moore, I.&G.N. Sur. 22. Drlg. sh. 5,320 ft.

Stanolind O. & G. Co. No. 7 Remley, H. T.&B. Sur. 28. T.D. 6,080 ft.; tstg.

Stanolind O. & G. Co. No. 2-C Cecil Brown, W. H. Snyder Sur. Drk.

Stanolind O. & G. Co. No. 2 P. McDonald, Mary Sloan Sur. T.D. 6,080 ft.; tstg.

Old Ocean—Brazoria County

Harrison & Abercrombie No. 3 Armstrong Plantation, Polley & Chance Sur. Drlg. sh. 8,915 ft.

Harrison & Abercrombie No. 1 Chenault, C. Breen Sur. T.D. 10,258 ft.; tstg.

Harris & Abercrombie No. 1 Fidelty O. & R. Co., Polly & Chance Sur. Drlg. sh. 6,230 ft.

Harrison & Abercrombie No. 1 Fisher, and Larsen, C. Breen Sur. Drlg. sh. 7,897 ft.

Harrison & Abercrombie No. 1 R. D. McDonald, C. Breen Sur. Loc.

Sun Oil Co. No. 1 Campbell, Chas. Breen Sur. Loc.

Sandy Point—Brazoria County

Stanolind O. & G. Co. No. 4 Fite, David Talley Sur. Top sd. 6,490 ft.; base sd. 6,493 ft.; T.D. 6,500 ft.; 5½-in. csg. 6,500 ft.

Stratton Ridge—Brazoria County

Sterling O. & R. Co. No. 1 J. C. Kramer, T. W. Grayson Sur. T.D. 3,695 ft.; P.B. 3,200 ft.; sdtrkd.; T.D. 4,631 ft., salt; 7-in. csg. 4,631 ft.; S.D. 4,960 ft.

West Columbia—Brazoria County

Fros & Dunnam No. 2 Masterson, G. Tennille Sur. Drlg. sh. 2,867 ft.

General Crude Oil Co. No. 1 Campbell Est., J. H. Bell Sur. Spd.

Texas Co. No. 27 W. H. Abrams, G. Tennille Sur. Drlg. sd.&sh. 5,250 ft.

D. M. Wallace No. 3 Smith, G. Tennille Sur. Drlg. 1,507 ft.

Cedar Point—Chambers County

Standard Oil Co. of Texas and Salt Dome Oil Corp. No. 2-118 State, Galveston Bay. Drlg. 4,336 ft.

Seabreeze—Chambers County

Seabreeze No. 4 Acom, H.T.&B. Sur. No. 103. Drlg. sh.&L. 7,844 ft.

Sun Oil Co. No. 1 Tate, H.T.&B.R.R Sur. Drlg. sh. 8,236 ft.

Turtle Bay—Chambers County

Stanolind O. & G. Co. No. 1-38 State (6,000 ft. S of field in Turtle Bay). Driving piling.

Hitchcock—Galveston County

N. W. Hunter No. 3 Aarco O. & G. Co., A. Burke Sur. T.D. 5,153 ft.; tstd. oil &S.W.; P.B. 1,149 ft.; sdtrkd.; drlg. 3,600 ft.

Maco Stewart No. 6 fee, J. Spillman Sur. Drlg. 2,000 ft.

You too, will agree the powerful suction action of the MILLER cleans out sand and sediment faster . . . that's why, it is the Sand Pump oil men around the world are using to increase production.

The MILLER is made in diameters of 2½, 3, 3½, 4, 4¼, 5, 5½, 7 and 9 inches and lengths of 20, 25 and 30 feet. 5/32-inch wall thickness in REGULAR Type, ¼-inch wall tubes HEAVY Type Sand Pumps.

INTERCHANGEABLE BOTTOMS
To Meet Every Condition

● BAILER BOTTOM
With the Bailer Bottom installed the MILLER is quickly changed to a Bailer giving you a combination of either Bailer or a Sand Pump in one tool.

● SAND BOTTOM
Used when tools are run and when well is shot to quickly remove loose material.

● STAR BOTTOM
Used for cutting the sand loose.

● CHISEL BOTTOM
(In Pump)
With this bottom tightly packed sand can be easily broken in small pieces so it can be picked up in the pump.

Write for Descriptive Folder and Price List

See Page 1445 COMPOSITE CATALOG

PATENTED NO. 1370340 NO. 1512906 NO. 1707390 NO. 1862528 NO. 1866555 NO. 2050067

MILLER Sand Pump Co.

General Offices and Shop, Box 4516
OKLAHOMA CITY, OKLA., U. S. A.

Branch Shops and Offices:
SAPULPA, OKLA. and KILGORE, TEX.

FOR SALE BY SUPPLY STORES EVERYWHERE

Bammel—Harris County

H. M. Lawrence and Geo. Lawrence No. 1 C. Ehrkardt, H. Simmons Sur. R.U.

Clinton—Harris County

Stanolind O. & G. Co. No. 2 Edwards Reels & Trobough Sur. Drk.
Stanolind O. & G. Co. No. 2 Paul Weber, Reels & Trobough Sur. T.D. 3,740 ft.; run Schlum.; drlg. ahead.

Eureka—Harris County

Jack Frazier No. 1 Emma Heiberg, J. Reinerman Sur. R.U.
Jack Frazier No. 2 Hogg Bros., J. Reinerman Sur. Loc.
Jack Frazier No. 1 Lackner, H. Reinerman Sur. T.D. 9,038 ft.; 5½-in. csg. 8,328 ft.; perf. csg. 8,085-95 ft.; flwd. 25 bbls. fluid per hr., 14% brksh. wtr.; killed; perf. csg. 8,082-94 ft.; tstg.
Houston Oil Co. No. 3 Heiberg & Lackner, J. Reinerman Sur. Loc.
Means & McGehee No. 1-D Laura Lackner, Sec. 3, Shady Acres subd. T.D. 7,720 ft.; flwg. 17 B.P.H.; ¼-in. ck.

Fairbanks—Harris County

Amerada-Stanolind O. & G. Co. No. 1 Adell, J. Clarkson Sur. T.D. 6,855 ft.; perf. csg. 6,843-48 ft.; tstg.
Amerada Pet. Corp. and Stanolind O. & G. Co. No. 3 Smith, J. Waugh Sur. Loc.
Bridwell O. & G. Co. No. 1 Gibson, Geo. Ayers Sur. T.D. 6,860 ft.; 5½-in. csg. 6,860 ft.; perf. csg. 6,851½-55½ ft.
P. C. Bundy No. 1 Neri, G. Williams Sur. 10¾-in. csg. 1,200 ft.
Gem Oil Co. No. 6 Reid, Geo. Ayers Sur. T.D. 6,855 ft.; W.O.C.
E. M. Hailey No. 1 Albert Brown, J. Clarkson Sur. Loc.
Sinclair Prairie Oil Co. No. 1 W. W. Goodykoontz, Wiley S. Powell Sur. Loc.
Stanolind O. & G. Co. No. 1 Schumacker, J. Daswell Sur. Cg. sh. 7,463 ft.
H. E. Williams No. 3 Stern, G. Williams Sur. Drlg. sh. 4,010 ft.
Windsor Oil Co. No. 3 O. E. Parker, J. Waugh Sur. Cg. 6,470 ft.

Friendswood—Harris County

Humble O. & R. Co. No. 23 Beamer, T. Choate Sur. Drlg. sh. 5,367 ft.
Humble O. & R. Co. No. 1 J. L. Jones, Perry & Austin Sur. Drk.
Humble O. & R. Co. No. 6 Kiesling-Dixon, T. Choate Sur. Drlg. sh. 4,657 ft.
Humble O. & R. Co. No. 3 Settegast, T. Choate Sur. Drk.
Humble O. & R. Co. No. 1 E. E. Watson. Drk.
Humble O. & R. Co. No. 4 Whitcomb, T. Choate Sur. Drlg. sh. 4,010 ft.

Cordele—Jackson County

H. J. Porter No. 4 Pressly, Peter White Sur. T.D. 2,714 ft.; 5½-in. csg. 2,714 ft.
H. J. Porter No. 1 Woussi, Peter White Sur. Loc.

Westfield—Jackson County

Magnolia Pet. Co. No. 4-A West, R. Musquiz Sur. Drlg. 430 ft.

Clam Lake—Jefferson County

Shell Pet. Corp. No. 3 McFaddin, S. A. Pace Sur. 10¾-in. csg. 1,532 ft.

Cheek—Jefferson County

Shell Pet. Corp. No. 1 Ed. Pleasant, C. Hildebrand Sur. T.D. 7,726 ft.; tstd. oil on D.S.T. 7,711-21 ft.; P.B. 7,725 ft.; flwg. 36 bbls. dist. daily through ¼-in. ck.; killed well; perf. csg. 7,717-20 ft.; flwg. 16 B.P.D.; ⅜-in. ck killed with wtr.; milling out backpressure valve.

LaBelle—Jefferson County

Sun Oil Co. No. 4 Broussard-Hebert, B. Blackman Lge. T.D. 8,675 ft.; 7-in. csg. 8,605 ft.

Spindletop—Jefferson County

British American Oil Co. et al No. 1 Gladys City, J. A. Veatch Sur. (deep test SW flank of dome). M.I.M.

Hardin—Liberty County

Commerce Oil Co. No. 1 Roberts, H. B. Johnson Sur. T.D. 7,597 ft.; tstg.
Geo. Echols No. 1 West, H. B. Johnson Sur. Drlg. sh. 3,310 ft.
N. C. Ginther No. 1 West, A. B. Hardin Sur. Drk.
Gulf Oil Corp. No. 2 Tullos, H. B. Johnson Sur. Drlg. sh. 6,530 ft.
Smith & McDannald No. 2 Rives, A. B. Hardin Sur. Drlg. sh. 6,810 ft.
Texas Co. No. 1 Davis, A. B. Hardin Sur. T.D. 7,825 ft.; tstg.
Woodley Pet. Co. No. 2 Emma Davis et al, A. B. Hardin Sur. T.D. 7,662 ft.; 5½-in. csg. 7,659 ft.

McCrosky—Matagorda County

Pierce Est. No. 5 fee, David Fenton Lge. Cd. oil sd. 6,603-04 ft.; tstg.

Bay City—Matagorda County

Hamman Explrn. Co. No. 2 Badouh, E Hall Sur. Drlg. 7,310 ft.

Segno—Polk County

J. K. Dorrance No. 4-A Wing, I.&G.N. Sur. No. 14. Drlg. sh. 4,410 ft.
Gulf Oil Corp. No. 3 A. Ragan, I.&G.N Sur., Sec. 15. T.D. 8,146 ft.; 5-in. csg. 8,144 ft.
Humble O. & R. Co. No. 9-B Kirby, M. Victor Sur. T.D. 8,736 ft.; 7-in. csg 8,200 ft.; perf. csg. 8,103-10 ft.; swbg.; well will not flow.

GULF COAST WILDCATS

Brazoria County

Fabriguze et al No. 1 Freeport Sulphur, Stephen F. Austin Sur. (Bryan Mound). M.I.M.
Normandie Oil Co. No. 1 M. A. Ramsey, H.T.&B. Sur. M.I.M.
Texas Co. No. 1 E. F. Davis, Sec. 36, T. Spraggins Sur., 3,900 ft. SE of Manvel field. Loc.

Chambers County

Geo. Anderson No. 1 Julia Casey, W. D. Smith Sur. Loc.
F. A. Gillespie et al No. 1 Kirby Lbr Co., Chambers Co. Sch. Ld. Sur. Drlg. sh. 2,512 ft.
Salt Dome Oil Corp. No. 1 Ogden, E. Douthit Sur. 10¾-in. csg. 1,640 ft.

Galveston County

F. J. Anderson No. 1 L. Lobit, Lot A Subd. No. 6, J. M. Perry and E. M Austin Lges. 10¾-in. csg. 2,520 ft.; T.D. 3,200 ft.; crkd. hole.

Harris County

Continental Oil Co. et al No. 1 J. J Sweeney, Sec. 5, W.C.R.R. Sur. Prep. to spd.
H. H. Givens No. 2 F. K. Adone, David Middleton Sur. Drk.

Jackson County

Chapman Minerals Corp. No. 1 Bennett ranch, Valentine Garcia Sur. Loc.
Texas Co. No. 1 J. F. Weed, John D. Newell Sur. R.U.

Jefferson County

British American Oil Prod. Co. et al No. 1 Gladys City, J. A. Veatch Sur. (SW flank of Spindletop). M.I.M.
Geo. Echols et al No. 1 American Natl Bnk., J. J. French Sur. Cg. sh. 8,996 ft.
I. E. Harwell No. 1 State, Gulf of Mexico. T.D. 5,840 ft.; D.S. stk.; pulled in two; S.D.
Humble O. & R. Co. No. 8-B McFaddin-State, Gulf of Mexico. 7-in. csg. 810 ft. T.D. 3,250 ft.; salt; abd.

Liberty County

John G. Mayo, Inc., No. 1 M. E. Roberts, J. F. DeRumayor Sur. 7-in. csg 40 ft.; T.D. 5,350 ft.; abd.

Matagorda County

Glenn H. McCarthy No. 1 Nancy Moffett et al, Susan Perkins Sur. 10¾-in. csg 2,405 ft.; T.D. 9,010 ft.; abd.

Montgomery County

Deep South Pet. Corp. No. 1 Foster Lbr. Co., Preyor Bryan Sur. 10¾-in. csg. 700 ft.; cg. sh. 4,735 ft.
Jack Frazier No. 1 Chase Natl. Bnk., D Garrett Sur. 10¾-in. csg. 1,700 ft.
G. G. M. Oil Co. No. 1 Floyd Oil Co., Lot 62, W.C.R.R. Sur. No. 11. 10¾-in. csg. 464 ft.
David D. MacDaniel No. 1 J. C. Fleming, D. M. Gaheen Sur. Temp. S.D. 4,650 ft.
Mills Bennett Prod. Co. No. 1 Victoria Griffin, Archibald Lge. Loc.
J. Smith et al No. 1 J. V. Scott, F. A. B. Wheeler Sur. S.D. 380 ft.

Orange County

Sun Oil Co. No. 1 Lutcher-Moore Lbr Co., B. Johnson Sur. Drlg. sh. 5,330 ft.

Waller County

Stanolind No. 1 Robertson, H.&T.C. Sur., Sec. 123. Drlg. sh. 6,986 ft.
Stanolind O. & G. Co. No. 1 J. J. Sweeney Est., T. S. Reese Sur. No. 110, 2,640 ft. E of No. 1 Freeman in Katy gas field. Loc.
Stanolind O. & G. Co. No. 1 Young, T. S. Reese Sur. No. 124. 13¾-in. csg. 136 ft.; T.D. 7,500 ft.; tstg.

Washington County

Speed Oil Co. et al No. 1 August Makowsky, D. McIntyre Sur. 10¾-in. csg. 964 ft.; T.D. 5,509 ft.; abd.

Wharton County

Western Gulf Pet. Co. No. 1 Rust, B. Johnson Sur. Drlg. L. rk. 4,232 ft.

S. W. TEXAS WILDCATS

Aransas County

Housh-Thompson, Inc., et al No. 1 Kent-Crane, Wm. M. Carper Sur. 10¾-in. csg. 960 ft.; drlg. sh. 2,400 ft.

Atascosa County

R. C. Stanley No. 1 Schumann, Simon Malone Sur. No. 1069. S.D. 1,300 ft.

Bastrop County

R. C. Franklin No. 2 Yarrington, Jose Manuel Bangs Sur. S.D. 1,725 ft.
Paul Texas and Ashby No. 1 J. T. Grizzard, Andrew Graham Sur. Cg. L. 7,043 ft.

Bee County

Aid et al No. 2 Imogene Hall, Geo. Kerr. Sur. R.U.
W. D. Walton et al No. 1 Ray, A. S. Mangum Sur. 10¾-in. csg. 156 ft.

Bell County

M. M. Gordon No. 1 Steele, Oliver T. Tyler Sur. S.D. 1,185 ft.

Bexar County

M. S. Blackburn No. 1 Miller, Thos. Barwick Sur. No. 324. Drlg. 810 ft.; no report.
Frank Gilpin, Jr., No. 1 Nieman, Juan Montes Sur. S.D. 40 ft.; abd.
Lewis Ridder No. 1 fee, Jose Maria Baerera Sur. Loc.

Blanco County

D. M. Johnston No. 1 Glasscock, W. W. McDonald Sur. No. 50. 10-in. csg. 150 ft.; S.D. 840 ft.

Caldwell County

R. H. Dye No. 1 Voight, Wm. Watkins Sur. S.D. 1,998 ft.

Calhoun County

Hiawatha O. & G. Co. No. 2 J. J. Roemer, J. Ogesberry Sur. Drlg. sh. 7,630 ft.

De Witt County

Marjo Oil Co. No. 1 W. D. McCurdy, John Hunt Sur. S.D. 150 ft.

Duval County

W. H. Appell No. 1 Hagist, B.S.&F. Sur. No. 265. Drk.
W. H. Appell No. 1 Rogers, El Mesquite gr. S.D. 2,665 ft.
Atlantic Ref. Co. No. 1 Garcia, Sec. 409. Bldg. drk.
J. W. Cosner No. 1 Garcia, A.B.M. Sur. 409. Drlg. 2,429 ft.
Daubert Gorman and Yoakam No. 1 Society for the Propagation of the Faith, S. B. Childers Sur. 175. Loc.
Frank Gravis No. 2 Schallert, Seale, Morris & Seale Sur. No. 255 (Palagana salt dome). S.D. 3,425 ft.
Magnolia Pet. Co. No. 1 Duval Co. Rnh. Co., G.C.&S.F. Sur. No. 267. Drlg. 1,410 ft.
E. J. Purl No. 1 Corkill, J. Poitevent Sur. Drlg. 2,310 ft.
Stewart and Nye No. 1 Welder, J. Poitevent Sur. No. 213. Drk.
R. A. Thompson No. 1 Parr, Julia Rogers Sur. No. 118. R.U.
W. A. Wagner No. 1 D. J. Weikel, John H. Gibson Sur. No. 497. R.U. and S.D.

Edwards County

Evans & Love No. 1 Steve Brown, Blk. 6, G.W.T.&P. Sur. S.D. 6,261 ft.

Frio County

Humble O. & R. Co. No. 1 Schley, Jos. Travaider Sur. No. 174. 15-min. D.S.T. 3,520-51 ft. tstd. no press.; recvd. 175 ft. mud with oil odor and 180 ft. S. W.; 15-min. D.S.T. 3,595-3,617 ft. tstd. 45 ft. of mud, S.S.O.: recvd. 2,500 ft P.L.O.; D.S.T. 4,720-85 ft.; drlg. sh. 5,170 ft.
Geo. Smith No. 1 Berry, T.C.R.R. Sur. No. 1. Drk.

Goliad County

Steinberge Pet. Corp. No. 1 Albrecht, T. Hancock Sur. Spd.
Sun Oil Co. No. 1 Lee Homer, John Payne Sur. Drlg. sh. 7,110 ft.

Guadalupe County

R. Hamil No. 1 E. J. Zuehl, Vincente Duran Sur. S.D. 450 ft.
A. D. King Rosenbrock, Vincente Duran Sur. Drlg. 756 ft.; abd.
A. D. King No. 1-A Rosenbrock, Vincente Duran Sur. No. 4. Drlg. 50 ft.
Marts and Beaven No. 1 Glenwinkle, Wakefield and Stewart Sur. Drlg. sh. 1,673 ft.
R. A. Williams No. 1 Weber, Guadalupe Torres Sur. Drlg. sh. 1,256 ft.

Hidalgo County

R. E. Hardin et al No. 1 E. M. Car, Hidalgo Co. Canal Subd., Lot 8, Blk. 8. Drlg. sh. 6,016 ft.
Phillips Pet. Co. No. 1 Flores (deep test N of Samfordyce field). T.D. 5,860 ft.; cmtd. 7⅝-in. csg. 5,847 ft. (protection string); drlg. sh. 8,326 ft.
Union Sulphur Co. No. 1 Am.-Rio Grande Ld. & Ir. Co. (Mercedes). Cmtd. 7-in. csg. 8,417 ft.; T.D. 9,618 ft.; 5½-in. lnr. set 8,369-9,618 ft.; tstd. S.W. 9,420-30 ft.; made sqze. job; P.B. 9,390 ft.; perf. csg. 9,372-80 ft.; swbd. S.W. and gas; perf. csg. 9,347-52 ft.; tstd. S.W.; perf. csg. 9,255-60 ft.; tstd. S. W.; perf. csg. 9,065-70 ft.; tstd. S.W.; perf. csg. 8,990-9,000 ft.; tstd. S.W.; perf csg. 8,920-25 ft.; tstg.
Wheelock & Collins No. 1 Temple Lbr. Co., Lino Cavos, Porc. 57-A. S.D. 6,589 ft.; drlg. sh 6,850 ft.

Jim Hogg County

Humble O. & R. Co. No. 3 Anna Kelsey Bass, San Raphel gr., 3,732 ft. N of Kelsey field discovery well. R.U.

Jim Wells County

Gulf Board Oil Corp. and Mills Bennett No. 1 Forry, Lavaca gr. T.D. 5,559 ft.; abd.
Humble O. & R. Co. No. 1 Ben Belitz, Staples Sur. 10¾-in. csg. 1,042 ft.; recovered 85 ft. oily mud; D.S.T. 3,930-50 ft.; cg. ahead.
Humble O. & R. Co. No. 1 John A. True, Los Presenos de Abajo Sur. 10¾-in. csg. 1,090 ft.; T.D. 5,730 ft.; abd.
Magnolia Pet. Co. No. 1 Moreno, La Trinidad gr. R.U.
Magnolia Pet. Co. No. 1 Romano, V. de Garcia Las Animas Sola gr., 1,126 ft. E of discovery well. Cd. sd., gas odor, 6,421-26 ft.; drlg. sh. 7,154 ft.
Presnall & Tsesmelis No. 1 Hoffman, Marcellino Lopez Sur. R.U.
Shell Pet. Corp. No. 1 C. H. Von Blucher, Lucinda Best Sur. T.D. 7,318 ft.; fsg.
Transwestern Oil Corp. No. 1 B. H. Dunlap, Sur. 179-181 (1½ mi. SW East Premont field). 18⅝-in. csg. 485 ft.; T.D. 5,107 ft.; sdtrkd.; drlg. sh. 4,786 ft.

Kendall County

Millican and Norman No. 1 Werner, J F. Torrey Sur. T.D. 909 ft.; bailed oil; 5½-in. csg. 907 ft.; drlg. L. 970 ft.
H. N. Reid No. 1 Marguardt, J. Travuso Sur. No. 150½. Drlg. 656 ft.

Kerr County

H. C. Starkey No. 1-A Saue, T.W.N.G. R.R. Sur. S.D. 395 ft.

Kimble County

Phillips Pet. Co. No. 1 Mudge, C.C.S.D.& R.G.N.G.R.R. Sur. No. 9. T.D. 2,095 ft.; abd.
Plateau Oil Co. No. 1 E. E. Bolts, S. Jones Sur. T.D. 1,435 ft.; W.O.C.
Plateau Oil Co. No. 1 S. J. Davis, N. Mitchell Sur. No. 44. Drlg. 217 ft.
Plateau Oil Co. No. 1 Hunger, J. Dujner Sur. T.D. 1,600 ft.; prep. to sdtrk.

Kinney County

C. B. Wardlaw No. 1 Standart, Meliton Valdez gr. Drlg. sdy. L. 1,290 ft.

Kleberg County

Pure Oil Co. et al No. 1 State Ld., Tr. 68, Laguna Madre Bay, Lse. No. 528. T.D. 9,350 ft.; fsg.

La Salle County

Lake-Tobian Oil Co. No. 1 O'Connor ranch, Blk. 35, Bland & Nelson subd. 10-in. csg. 200 ft.; prep. to drill ahd.

Lavaca County

A. C. McCord et al No. 1 Cora Russek, Blk. 33, J. C. Reynolds Sur. (S. of Ezzell). Spd. and S.D.
Midway Oil & Roy. Co. No. 2 Michalcik, Jack Sur. Loc.

Lee County

Fred Pederson et al No. 1 Brown, David Hudson Sur. Drlg. 4,836 ft.
A. H. Tarver No. 1 J. W. Lawhon. T.D. 3,345 ft., Edws. L.; run 5½-in. csg. to test at 3,300 ft.; recmtd. csg.; W. abd.

Live Oak County

J. K. Adair No. 1 Schultz Live Stock Co., Wm. J. Pierce Sur. 10¾-in. csg. 20 ft.; drlg. sh. 1,410 ft.
R. H. Feltner No. 1 Reed, I.&G.N. R.R. Sur. 15. R.U.
Frank Gravis and Mintex Dev. Co. No.

LEGAL

Sale of oil and gas leases—Department of the Interior, General Land Office, Washington, D. C. Notice is given that the following described lands and deposits of oil and gas therein contained are offered to the qualified bidder of the highest bonus per acre for leasing pursuant to section 17 of the leasing act of February 25, 1920 (41 Stat. 437), as amended by the act of August 21, 1935 (49 Stat. 674), at the royalty rate scale in the lease form shown in Circular 1386: Unit No. 1, the principal island, East Timballer Island, known locally as Bird Island, located in fractional Secs. 34, 35, and 36, T. 23 S., R. 21 E., Secs. 2 and 3, T. 24 S., R. 21 E., and Sec. 31, T. 23 S. R. 22 E., Louisiana Meridian, situated on the Gulf Coast of La Fourche Parish, State of Louisiana, lying above the elevation of mean high tide, containing 295.77 acres, more or less. Unit No. 2, two islands, adjoining Unit No. 1 in a northeasterly direction between said principal island and Raccoon Pass, Island No. 1 located in fractional Sec. 31, and Island No. 2 located in fractional Sec. 32, both in T. 23 S., R. 22 E., Louisiana Meridian, situated on the Gulf Coast of La Fourche Parish, State of Louisiana, lying above the elevation of mean high tide, containing 11.69 and 69.29 acres, respectively, more or less. Sealed bids will be received in the office of the Secretary of the Interior up to 12:00 o'clock (noon), October 31, 1938. Bids must be submitted on each unit separately but both units, if awarded to the same bidder, may be included in a single lease. Each bidder must submit a certified or cashier's check or draft for 1/5 of the amount bid, payable to the order of the Secretary of the Interior, and furnish a showing of qualifications as required by section 7 of Circular 1386. The remaining 4/5, together with the annual rental at the rate of $1 per acre, must be paid by the successful bidder prior to the issuance of lease, and the deposits of other bidders will be returned. The envelopes should be marked plainly "Bid for Unit No. — (1 or 2), East Timballer Area. Not to be opened before noon, October 31, 1938." The bidders are warned against violations of the provisions of Sec. 59 of the United States Criminal Code, approved March 4, 1909, prohibiting unlawful combination or intimidation of bidders. The right is reserved to reject any and all bids in the discretion of the Secretary of the Interior. Protests by the State of Louisiana and others claiming under the State against the granting of Government leases for the group of islands on the ground that they are the property of the State were overruled by the Secretary of the Interior in a decision rendered July 29, 1938 (A. 21589), after an oral hearing at which the protestants were represented. The Secretary held that the United States has asserted ownership of and jurisdiction over East Timballer Island for more than 100 years and that the group of islands are public lands of the United States. Commissioner, General Land Office.

1 Northwest Inv. Co., Uel Ritchie Sur. No. 133. Est. T.D. 3,000 ft.; blew in making S.W.&G.
Hanna et al No. 2 West, C. O. Ragland Sur. S.D. 3,506 ft.
Holland Oil Co. No. 1 Wallace, Cameron Co. Sch. Ld. Sur. S.D. 200 ft.
J. H. Turner No. 1 Federal Ld. Bnk. of Houston, John Turner Sur. Drlg. sh. 875 ft.
Wellington Oil Co. No. 1 Sanger. T.T.R. R. Sur. 349. Drlg. sh. 2,715 ft.
V. G. Schimmel et al No. 1 Geo. West, G. L. Haas Sur. T.D. 210 ft.
Wallace & Jones No. 1 Burrows, Eneas Smith Sur. Drlg. sh. 2,637 ft.

McMullen County

W. T. Kirby No. 1 Chylek, J. M. Hernandez Sur. T.D. 1,210 ft.; P.D.
Scarborough & Biglane No. 1 Matula Emmitt, Jas. Garner Sur. No. 6. Drlg. 100 ft.; no report.
Wm. Spice, Jr., No. 1 Edrington, A.B.& M. Sur. 57 (5 mi. E. Loma Alto). T.D. 2,519 ft.; flwg.; no ga.

Maverick County

L. M. Lockhart No. 1 Ashbrook, W. J. Phillips Sur. No. 83. Drlg. L. 3,437 ft.
Wellington Oil Corp. and Humble O. & R. Co. No. 1 Indio Cattle Co., Antonio Revas gr. Drlg. 328 ft.

Medina County

J. W. Cromwell No. 1 J. W. Tondre, 1,-J. Rogers Sur. T.D. 1,250 ft.; P.B. 1,080 ft.; cmtd. csg. 1,021 ft.; shot 1,-024-80 ft.; T.D. 1,336 ft.; S.D.
Fred Felty No. 1 Jacob Schweers, Wm. Bryan Sur. No. 20. R.U.
A. D. Gaston No. 1 Rogers, Henry Wilson Sur. Drlg. 200 ft.; no report.
L. W. Stieren No. 1 Haegelin, Doll-Smitherman Sur. T.D. 1,108 ft.; abd.
Whitefield and Draper No. 1 Ulbrich, Francis Hoffman Sur. No. 204. R.U.
Ziegler et al No. 1 Wiemers, F. Thurmm Sur. S.D. 905 ft.

Nueces County

Phillips Pet. Co. No. 1 Masten, Blk. 146, Delores I. & A. Co. Sur. Drlg. sh. 3,-340 ft.
Texas Co. No. 1 E. Little et al, Wm. Little Sur. 10¾-in. csg. 1,174 ft.; drlg. sh. 4,267 ft.
Union Prod. Co. No. 1 Minnie Brown (Agua Dulce area). Drlg. sh. 11,267 ft.

Refugio County

Geophysical Service Co. No. 1 Spaulding, Sec. 3, Aldrete Sur. Drlg. 360 ft.
Geophysical Service Co., Inc., et al No. 3 Rooke (LaRosa field), Jose Miguel Aldrete 6¼ Lge. Drlg. sh. 4,425 ft.
J. W. Heard et al No. 1 Hudson, Estaben Lopez Sur. R.U.
Rutherford Oil Corp. No. 1 H. A. Schirmer, Sec. 1, Aldrete Sur. R.U.

San Patricio County

Illinois Pet. Co. No. 1 Wilson, Blk. 9, J. J. Welder Sur., Coleman Fulton subd. Drlg. 4,962 ft.

Starr County

Hagan and Stewart Oil Co. No. 2 Salinas, La Sarotosa Antonio Canales Salinas Sur. R.U.
Magnolia Pet. Co. No. 1 Guerra, Santa Cruz gr. (LaReforma field), 1,900 ft. SW of discovery well. T.D. 5,945 ft.; 7-in. csg. 5,945 ft.; drlg. plug.
Sun Oil Co. No. 1 Speer, Sec. 274 (1 mi. SW of discovery well). R.U.

Travis County

L. G. Priest No. 1 Mazock, J. M. Leavy Sur. No. 5. S.D. 855 ft.
R. F. C. Oil Co. No. 1 Jones, Reuben Hornsby Sur. No. 17. 5-in. csg. 1,009 ft.; drlg. L. 1,307 ft.; no report.
W. P. and O. A. Wolter No. 2 Johnston, Jas. Burleson Sur. Loc.

Webb County

Gage and Dawson No. 1 Bruni Est., H. Adams subd. of M. Arispe gr., Sec. 10. Drlg. 1,420 ft.
W. H. Holland No. 1 Bruni, J. V. Borrego gr., C Blk. 76, El Ranchito pasture. R.U. and S.D.
Lewis Jones No. 1 Bruni, Alberca De Arriba gr. Cg. sh. 3,270 ft.
J. W. O'Byrne No. 1 Lacey, Mary E. Wideman Sur. T.D. 2,522 ft.; abd.

Williamson County

F. J. Anderson No. 1 Teichelman, Absalam, Jett Sur. T.D. 2,451 ft.; fsg.
H. H. Coffield No. 1 Poe, Harrison Owens Sur. T.D. 2,279 ft.; abd.
Fritz Fuchs No. 1 Stiles, Jehu Bevil Sur. No. 56. T.D. 1,085 ft.; abd.

Wilson County

Stapper Oil Co. No. 1 J. McDaniel, L. Manchoca Sur. S.D. 3,008 ft.; prep. to drill ahead.

Zapata County

Kirkwood and Morgan No. 1 Flores, G. Flores Sur. 240. Loc.

EAST TEXAS

(Border Counties)

Cass County

Bateman Drlg. Co. No. 1 Eliza Jaynes, 80-ac. tr., Ambrose Douthet Sur. D.S. stk. 5,817 ft.
Bay Oil Corp. No. 6 Cobb, G. Crowder Sur. 9⅝-in. csg. 1,056 ft.; drlg. sh.&L. 5,450 ft.
Harry Hanbury No. 1 Echols et al, SE cor. Echols tr., Wm. Mayes Sur. Tstd. S.W. and S.O. 5,987 ft.; P.B. 5,967 ft and W.O.C.; old T.D. 5,987 ft.; drld. out to 5,970 ft.; tstd. S.W.; S.O.; W.O
Texarkla Oil Corp. No. 1 Mayo, Bryant Holmes Sur. Set 6⅝-in. csg. 6,120 ft. perf. 6,068-80 ft.; tstd. S.W.; shot formation 6,068-80 ft. with 3 qts. nitro: 1,000 ft. O.I.H.; tstg. with flow valves 6,143 ft.

Marion County—Rodessa

Ark.-La. Gas Co. No. 1 Badgett, Allen Urquhart Sur. Set 6-in. csg. [illegible] ft. T.D. 5,998 ft.; swbd. and flwd. 340 B.P.D.; comp.; comp.; 192 B.P.D.; ¼-in. ck.; T.P. 100 lbs.; C.P. 725 lbs.
Ark.-La. Gas Co. No. 1 Hussey, Chas. Lockhart Sur. Drlg. sh.&L. 4,124 ft.
Carroll & Tooke No. 2 Fitzgerald, Gumpton Sur. Drlg. 657 ft.
Gulf Oil Corp. and Ohio Oil Co. No. 1 H. Davis, 30-ac. tr., Hanks Sur. 13⅜-in. csg. 131 ft.; drlg. sh. 3,100 ft.
Phillips Pet. Co. No. 2 Benefield, J. Hanks Sur. T.D. 6,170 ft.; set 7-in. csg. 6,157 ft.; perf. 6,066-73 ft. and 6,084-87 ft.; tstd. H.F.O.; will not flw.; reperf. csg. 6,062-73 ft. and 6,083-87 ft.; swbg. to test 6,170 ft.
Shell Pet. Corp. No. 1 Fant, Coy Sur. Drlg. sh. 1,354 ft.
Shell Pet. Corp. No. 5 Schluter, Wm. Smith Sur. 5-in. csg. 6,094 ft.; perf 6,066-82 ft.; comp.; 104 B.P.D.; T.P. 200 lbs.; C.P. 875 lbs.; T.D. 6,097 ft.
Texas Co. No. 1 Braden, J. M. Fitzgerald Sur. Drlg. L. 3,086 ft.

Marion County—Other

Capps Bros. Lbr. Co. No. 2 Stiles, Wall Sur. Tstg. 2,394 ft.

Panola County

Texas Co. No. 1 Claude Adams, T. Cox Sur. Top lower Marine 7,792 ft.; D.S. stk. 11,303 ft.; cutting out D.S.

Sabine County

Hugo Allen No. 1 Brooks, Isaac Low Sur. D.S. stk.; T.D. 5,644 ft.; drld. out cmt. to 4,864 ft.; will whipstock.

WEST TEXAS WILDCATS

Andrews County

Fuhrman Pet. No. 1 G. O. Ashton, sec. 12, Blk. A-42, P.S.L. Sur. Tstg. 4,-492 ft.
Humble O. & R. Co. No. 1-G University Sec. 18, Blk. 4, University Sur. Drlg. 1,555 ft.
Olson Drlg. Co. No. 1 Lockhart-Brown, 5 mi. W of south end of Fuhrman pool. P.B. 4,770 ft.; C.O. 4,500 ft.
Texas Co. No. 1-H University, Sec. 4, Blk. 14, Univ. Sur. Drlg. 1,888 ft.
J. W. Tripplehorn No. 1 M. A. Thornberry, Sec. 2, Blk. 42-A. Drlg. 2,965 ft.
H. C. Wheeler No. 1 White-Shelton Sec. 18, Blk. 36-A, P.S.L. Sur. P.B. 805 ft.; W.O.C.; crooked hole.

Cochran County

Magnolia Pet. Co. No. 1 Della Wright Lab. 7, Lge. 96, Mills Co. Sch. Lds Sur. Drlg. 4,499 ft.
Texas Co. No. 1 D. S. Wright, Lge. 115, Lab. 23, Potter Co. Sch. Lds. P.B. 4,-910 ft.; swbg.; flwd. S.O.

Coke County

Barnett Pet. Co. No. 1 J. R. Mims, Sec. 39, Blk. W, T.&P. Sur. S.D. 1,861 ft.

Crane County

Gulf Oil Co. No. 2-B State-Lassiter, University Sur., Blk. 30, Sec. 27. Tstg. swbg. 30 B.O.P.D. 3,010-3,113 ft.; fsg sd. pmp. 3,172 ft.

Culberson County

Harry J. W. Niehaus No. 1 fee, Blk. 109, Sec. 13, P.S.L. Sur. 1,800-ft. test. S.D. 2,500 ft.
Quito Oil Co. No. 1 Cameron Lbr. Co., sec. 24, Blk. 81, P.S.L. Sur. S.D.R. 945 ft.

Dickens County

Bond D. Jones No. 1 Ford et al, I.&G.N. Sur. S.D.O. 2,770 ft.

Ector County

Fields et al No. 1 Owenwood, sec. 6, Blk. 44, T.&P. Sur. Drlg. 3,510 ft.
Sinclair Prairie No. 2-B P. Moss, Sec. 40, Blk. 44, T.&P. Sur. P.B. 4,002 ft. comp.; 90 B.O.P.D.

El Paso County

Tri-State Oil Co. No. 1 Kinkel. S.D. 3,571 ft.

Gaines County

Atlantic Refg. Co. No. 1 A. J. & J. J Parker, Sec. 264, Blk. G. W.T.R.R. Sur. W.O.C. 3,135 ft.
H. J. Brown No. 1 A. L. Wasson, Sec. 51, Blk. AX, P.S.L. Sur. Loc.
Devonian Oil No. 1 King Est., Sec. 6 Lge. 305, Dawson C.S.L. Sur. Drlg. 2,480 ft.

Garza County

Gulf Oil Corp. No. 1 Swanson, Sec. 25, Blk. 2, H.&G.N. Sur. Drlg. 7,500 ft.

Hockley County

Gulf Oil Corp. No. 2 Mallett, Lge. 34, Labor 25. Est. 140 B.O. 12 hrs.; T.D. 5,035 ft.
Sid W. Richardson No. 2 Slaughter, Lge. 39, Lab. 58, Maverich Sur. W.O. flwd 100 B.O.P.D.; T.D. 4,989 ft.
Snowden & McSweeney No. 1 A. A Slaughter, Zavalle C.S.L. Sur., Lge 35, Lab. 74. Drlg. 4,770 ft.
The Texas Co. No. 1-B Mallett Lands Lab. 1, Lge. 52, Scurry C.S.L. Sur Drlg. 3,570 ft.

Howard County

Anderson & Prichard No. 1 H. Hyman Est., Sec. 85, Blk. 29, W.&N.W. Sur. Drlg. 2,505 ft.
Parten & Strickland No. 1 O'Daniel, Sec. 39, Blk. 30, T.&P. Sur. Loc.
W. B. Powell, Trustee, No. 1 Guitar Trust Blk. A, sec. 17, Bauer & Cockrell Sur Drlg. 3,065 ft.

Hudspeth County

Haymon Krupp Oil & Ld. Co. No. 1 Thaxton, SE¼ Sec. 34, Blk. 74, Twp. 6. U.R. 5-in. 5,102 ft.
Haymon Krupp No. 1 Briggs, sec. 24, Blk 73, Twp. 7, T.&P. Sur. S.D. 4,415 ft.

Jeff Davis County

Joiner Oil Corp. No. 1 Jones-Coffield. S.D. 3,742 ft.

Lynn County

John L. Baldridge No. 1 Alma Lbr. Co., Sec. 151, H.E.&W.T. Sur. Prep. rng. 5-in. 4,450 ft.

Menard County

C. D. Haggerty No. 1 Callon, sec. 36, Jim Franz Sur. Fsg. 1,270 ft.

Pecos County

E. B. Carruth Tr. No. 1 J. H. Tippett Sec. 4, Blk. 194, G.C.&S.F. Sur. Spd. and S.D.
Geo. J. Greer No. 1 Price Est., Sec. 3 Blk. 12, H.&G.N. Sur. Drlg. 1,558 ft.
J. N. Gregory et al No. 1 Humble-O'Neil, H.&G.N. Sur., Blk. 10, Sec. 74. Drlg. 1,480 ft.
Helmerich & Payne et al No. 1 Dow Puckett, Sec. 66, Blk. 3, T.&P. Sur.; 3,500-ft. test. W.O.R.
Humble O. & R. Co. No. 1 A. H. Robertson, Sec. 27, Blk. OW, T.C.R.R. Sur.; 4,500-ft. test. Drlg. 415 ft.
O. E. Schade No. 1 Neville, Sec. 72, Blk. 194, G.C.&S.F. Sur.; 2,500-ft. test. Drlg. 225 ft.
S. Thompson No. 1 Elsinore Cattle Co., Sec. 54, Blk. D, G.C.&S.F. Sur. Fsg. 7,340 ft.
Thomason Prod. Co. No. 1 Notions, Sec. 1, Blk. 105, W.P. Howard Sur. S.D. 363 ft.
Union Oil & Mining Co. No. 1 First Natl. Bnk. of Ft. Stockton, Sec. 6, Blk. 9, H.&G.N. Sur. S.D. 1,760 ft.

Reagan County

Culbertson & Irwin No. 1 J. F. Nunn, Sec. 26, Blk. B, L.&S.V. Sur. D.&A. 3,457 ft.
John W. Emch No. 1 T.&P. Ld. Trust, Sec. 203, Blk. 1, T.&P. Sur. Loc.

Reeves County

Frankley & Rice No. 1 W. A. Tunstill, Sec. 10, Blk. 56, T.&P. Sur. Drlg. 2,755 ft.
Ohio Oil Co. No. 1 Papham, Sec. 18, Blk. 54, T.&P. Sur. Drlg. 3,725 ft.

Runnels County

Castor-Koerner & Goodrich No. 1 Beddo, Subdiv. 41, T. T. Williamson Sur. No. 15½. Drlg. 310 ft.

Scurry County

Coffield & Guthrie No. 1 E. E. Spears et al, Sec. 130, Blk. 97, H.&T.C. Sur. P.B. 2,493 ft.; C.O.; O.I.H.

Sterling County

J. W. Sward No. 1 Brennand, Sec. 107, Blk. 2, H.&T.C. Sur. S.D.O. 3,011 ft.

Stonewall County

General Crude Oil Co. No. 1 J. D. Smith, Sec. 371, Blk. 2, H.&T.C. Sur., 12 min.N Rotan. U.R. 5,190 ft.

Terrell County

Schermerhorn Oil No. 1 H. P. Allison, Sec. 22, Blk. B-2, C.C.S.D.&R.G.N.G. Sur.; 2,500-ft. test. S.D. 2,388 ft.

Tom Green County

Spinner No. 1 Reed, Mason Ferry Ranch Sur. Fsg. 5,118 ft.
J. B. Watson No. 1 Llano, C.S.L. Sur., Sec. 16; 500-ft. test. Last report.

Upton County

White & Wilson No. 1 Webb, Sec. 176, Blk. 1, C.C.S.D.&R.G.N.G. Sur. S.D.; csg. 150 ft.

Val Verde County

A. W. Little No. 1 R. W. Sellers, Sec. 34, H.&G.N.R.R. Sur. 1,500-ft. test. S.D.R. 344 ft.

Ward County

Herschel M. Jaffe No. 1 Viola Meyers, Sec. 17, Blk. 32, H.&T.C. Sur. M.l. larger mch. 550 ft.

Winkler County

S. W. Richardson No. 1-A J. M. Brosham, Sec. 22, Blk. 77, P.S.L. Sur. Drlg. 2,630 ft.
J. R. Sharp No. 1 Sharp-Crume, Sec. 7, Blk. B-2, P.S.L. Sur. Drlg. plug 2,873 ft.
J. R. Sharp No. 2 Sharp-Crume, Sec. 7, Blk. B-2, P.S.L. Sur. Loc.

Yoakum County

Honolulu Oil Co. No. 1 R. M. Kendrick, Sec. 825, Blk. D, J. H. Gibson Sur. Drlg. 4,570 ft.
Magnolia Pet. Co. No. 1 Lynn, Sec. 770. Tbg. to treat; swb. 75 B.O.P.D.
S. C. Yingling et al No. 1 Nettie Barrier, Sec. 6. Drlg. 5,050 ft.

TEXAS PANHANDLE

Carson County

Texhoma Nat. Gas Co. No. 1 J. M. Poling, Sec. 30, Blk. Y-2, T.&T. Sur. S.G. 2,914-3,058 ft.; sour gas; S.D. 3,305 ft.

Collingsworth County

White No. 1 Wischamper, S.D. 2,263 ft. Johnson No. 1 Taylor. S.D. 875 ft.

Deaf Smith County

Uscan No. 1 Farwell. S.D. 5,650 ft.

Donley County

Robinson No. 1 Kuteman, Sec. 88, Blk. 20, H.&G.N. Sur. Big. 2,840 ft.

Floyd County

Mills Bennett No. 1 Montgomery, F. J. Latham Sur., 6 mi. S of Floydada. S.D. 5,960 ft.

Gray County

Lone Star Gas Co. No. 1 Fowler. Comp.; 5,000,000 ft. gas daily.
English No. 1 Eudy. S.D. 3,977 ft.

Kent County

B. Dolman et al No. 1 C. V. O'Keefe, Sec. 50, Blk. 1, 15½-in. csg. set at 140 ft.; drlg. at 180 ft. last report.

Lipscomb County

M. C. Tieman No. 1 Spangle, Sec. 626, Blk. 43, H.&T.C. Sur. S.D. 50 ft.

Potter County

Sinclair Prairie Oil Co. No. 1 Bush, Sec. 23, Blk. 6, B.S.F. Sur., about 3 mi. N of Amarillo; 8,500-ft. test. Rmg. hole 3,340 ft.; T.D. 3,640 ft.

Roberts County

Whitlock No. 1 Cunningham. Recmt. csg. 2,750 ft.

E. C. TEXAS WILDCATS

Anderson County

H. L. Hunt No. 1 Shaw & Cern, D. Parker Sur. Comp.; 115,000,000 ft. gas daily.

Angelina County

W. C. Atkinson No. 1 So. Pine Lbr. Co., T.&N.O. Sur. No. 14, 9 mi. SW of Lufkin. S.D. 90 ft.
J. C. Bonham No. 6 Cameron Lbr. Co., D.&A. 642 ft.
J. C. Bonham No. 7 Cameron Lbr. Co., E. Miller Sur., 7 mi. E of Zavalla. R.U.
Ginter Bros. No. 4 Copes Hrs., J. Morin Sur., 3 mi. E of Dibol. Cg. 2,170 ft.

Cherokee County

R. Bunn Drlg. Co. No. 1 Bolin, W. A. Walter Sur., 3 mi. SE of Lone Star; 3,000 ft. E of Bunn No. 2 Bounds. Cg. oil sd. 5,005-07 ft.; C.O.; est. 2,-000,000 ft. gas; T.D. 4,007½ ft.

Freestone County

G. Shryock No. 1 M. S. Clark, M. D. Canton Sur., 8 mi. NW of Teague. Drlg. 4,000 ft.

Grayson County

Jim McMurrey No. 1 Dr. T. J. Long, J. Garland Sur., 2 mi. S of Collinsville; 4,000-ft. test. W.O.C. 78 ft.

Gregg County

Humble-Gulf No. 1 Porter Horton, H. G. Hudson Sur., 3½ mi. SW of Longview; 7,500-ft. test. Cg. 7,245 ft.

Houston County

John G. Mayo No. 1 A. Warroch, J. Sheridan Sur., 1½ mi. E of Procella. R.U.

Kaufman County

Sam Knoerr No. 1 J. B. Hunter, P. Walker Sur., 5 mi. S of Terrell. Drk.
W. S. McGee No. 1 Pritchett, J. Hendricks Sur., 7 mi. W of Mabank. S.D.; 3,104 ft.
J. F. McLaughlin No. 1 Wood-Nash, J. C. Cortez Sur., ¾ mi. SE of Scurry. Drk.

Lamar County

Dahl Bros. & Barr No. 2 McQuiston, R. Russell Sur., ½ mi. N of Paris. S.D. 30 ft.

Leon County

Lone Star Gasoline Co. No. 1 Steve Pate, D. J. Haskins Sur., 8 mi. SE of Buffalo gas area. W.O.C. 5,782 ft.
T. J. Tucker No. 1 Same Vane, James Webb Sur., 4½ mi. SE of Keechi. R.U.R. 100 ft.
Wynne Drlg. Co. No. 1 H. L. Brown, Joseph Brown Sur., ¾ mi. NW of Keechi and on Sinclair Prairie farmout. Drlg. 5,502 ft.

Limestone County

Strowd Gas Co. No. 1 S. Adkins, A. Varella Sur., 1 mi. W of Groesbeck. Tstg. 806 ft.

McLennan County

J. C. Kilgore No. 1 Tom Motis, R. D. Price Sur., 4 mi. E of town of West; shallow test. Loc.
Lisle Steele No. 1 C. H. Cherry, M. Martinez Sur., 4½ mi. SE of Waco. S.D. 1,300 ft.

Madison County

W. C. Holleman No. 1 D. C. Cannon, J. P. Phillips Sur., 7 mi. NW of Madisonville. W.O.C. 245 ft.

Navarro County

Silton & Ivey No. 2 Marshall, T. J. Chambers Sur. Bailing 1 B.O.P.D.; T.D. 653 ft.
Touhy & Darnes No. 1 G. H. Love, D. W. Collins Sur., 1½ mi. N of Corbett. Drlg. 946 ft.

Rains County

McKinley & Hastings No. 1 McTaggert,

B. Milder Sur., 1 mi. W of Emory. Loc.

Red River County

Daniels et al No. 1 J. J. Gaston, J. Guest Sur., 2 mi. S of Detroit. S.D. 1,109 ft.
Walters et al No. 1 Phamplin, W. Moore Sur., 3 mi. SE of Kanawha in NW part of county. S.D. 730 ft.

Van Zandt County

W. S. King No. 1 Edna W. Watson, M. G. Whitaker Sur., 5 mi. S of Grand Saline. S.D. 2,600 ft.

NORTH TEXAS WILDCATS

Archer County

Helmerich & Payne et al No. 2 L. F. Wilson, Blk. 25, A.T.N.C.L. Sur. Drlg. deeper to 5,129 ft. and W.O.C.
Sinclair Prairie No. 1 J. A. Hood, Blk. 18, A.T.N.C.L. Sur. Drlg. 4,407 ft.

Baylor County

H. F. Wilcox No. 1 J. E. Fritz, D. Bar-Low Sur. A-10. Loc.

Clay County

Walter Gant No. 1 Bryant Edwards, S. C. Beidon Sur. A-12; 6,000-ft. test. 6⅝-in. 5,990 ft.; S.L. 5,994-6,016 ft.; T.D. 6,354 ft.; P.B. 6,069 ft. and shot csg.; tstg.

Cooke County

Bin Indian Oil Co. No. 1 Alexander, T. Clevenger Sur., Abst. 1133. Drlg. 1,722 ft.
Sinclair Prairie Oil Co. No. 1 Mrs. J. D. Putnam, T. W. Ward Sur. No. A-1089. B.S.S.O. 4,970-83 ft.; tstg. show oil and S.W.; 9⅝-in. csg. 5,166 ft.; sd. 5,443-48 ft.; test S.W.; drlg. 5,982 ft.

Grayson County

Mildred Oil Co. No. 1 L. C. Neatherly, Chas. Quillen Sur. S.S.O. 3,972-3,90 ft.; P.B. 3,897 ft.; perf. csg. with 60 shots; stg.; pmpg. on test; est. 10 B. P.H.

Jack County

Benoit No. 1 J. S. Rhodes "C," B.B.B. &C. Sur. A-2199. Drlg. 4,540 ft.
General American Oil Co. No. 1 Ben Gunter, S. Pritchard Sur. A-459; 3,200-ft. test. Drlg. 3,020 ft.

Knox County

Roeser Pendleton and I.T.I.O. No. 1 G. H. Beavers, Sec. 151, H.&T.C. Sur. Drlg. 3,620 ft.

Montague County

L. T. Burns No. 1 Maggie Mitchell, J. W. Massie Sur. A-463; 4,000-ft. test. Drlg. 2,880 ft.
H. H. Powell No. 1 Arch Durhan, W. J. Wagoner Sur. A-936. Drlg. 1,800 ft.
Sinclair Prairie No. 1 Hill, Blk. 71, L. C.S.L. Sur. Drlg. 1,503 ft.

Wilbarger County

Consolidated Oil Co. No. 1 Ancell, Sec. 35, H.&T.C. Sur. 10-in. 112 ft.; 6⅝-in. 4,070 ft.; est. 150 bbls.; tstg.
Phillips Pet. Co. No. 1 M. Servatius, Sec. 78, H.&T.C. Sur., Blk. 14. Drlg. 2,600 ft.

Young County

Anzac Oil Corp. No. 1 E. S. Graham, A. Hines Sur. A-135. Drlg. 4,599 ft. 750 ft.
Horwitz & Oldom No. 1 C. J. Taach B, Sec. 248, T.E.&L. Sur. 6⅝-in. 4,113 ft.; C.O. 4,545 ft.
R. V. Tidewell No. 1 J. N. Ivey, F. L. Green Sur., Abst. 105. Drlg. 1,830 ft.

WEST CENTRAL TEXAS DISTRICT

Brown County

Hightower O. & R. Co. No. 1 Payne, sec. 31, H.&T.C. Sur. D.&A. 2,462 ft.
Whatley No. 1 Browder, C.T.R.R. Sur., Abst. 281. D.&A. 1,655 ft.

Coleman County

Hoffman & Page No. 1 T. A. Drake, J. H. Woods Sur. No. 46. S.D.R. 2,010 ft.
Bob Murray No. 1 Dibrell, H. Kigan Sur., near Camp Colorado. Acd. 2,360-65 ft.; no results.

Comanche County

Elmore No. 1 Moorman, Sec. 37, D.D.& A. Sur., 3 mi. NE of Sipes Spgs. M. I.M.
Loraine No. 1 Haile, Sec. 9, Blk. 3, H. &T.C. Sur. S.D. 2,750 ft.
Sells Pet. Co. No. 1 Smith, Sec. 12, Blk. 2, H.&T.C. Sur. S.D.; may shoot; est. 25 B.O.P.D.; S.D.; no test 2,798 ft.

Erath County

Wayne Chandler No. 1 Chandler, J. W. Moore Sur., Abst. 571. Drlg. 2,380 ft.

Fisher County

S. and D. Daube No. 1 Hardy, Sec. 49, Blk. 2, H.&T.C. Sur. T.S.; S.D.; no test 4,425 ft.
Owens-Snebold and A. C. Varner No. 1 J. H. Millsap; 3,500-ft. wildcat, 2 mi. NW McCaulley, 330 SL, 330 WL, Sec. 61-2, H.&T.C. Sur. Drlg. 3,312 ft.

Haskell County

T. P. Coal & Oil Co. No. 1 Livengood, Pardue pool outpost. Treated; prep. swab.; drlg. 2,950 ft.; H.F.W.

Jones County

Brown Eagle Oil Co. No. 1 Haynes, Sec.

(Continued on Page 122)

To Better Serve

Our Friends and Customers
In TEXAS, NORTHWESTERN LOUISIANA, SOUTHWESTERN ARKANSAS and NEW MEXICO

We are establishing a

NEW DISTRICT OFFICE

707 PETROLEUM BUILDING
Offices of TAUBERT & McKEE

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J. D. ROBERTS, District Manager
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GENERAL PAINT CORP. INDUSTRIAL PAINTS and PIPE LINE COATINGS
GENERAL ELECTRIC MOTORS, LIGHT BULBS, ETC.
HERCULES ENGINES
LUFKIN RULES AND TAPES
General Line of Used Oil Field Equipment

We Solicit Your Inquiries and Patronage

OKMULGEE SUPPLY CORPORATION

General Offices: OKMULGEE, OKLA.

Rocky Mountain Runs

Production estimates for week ended September 24:

WYOMING

	Bbls.
Salt Creek	15,100
Big Muddy	1,190
Badger Basin	100
Black Mountain	140
Byron	4,770
Cole Creek	70
Dallas Derby	350
Dewey dome	130
Dutton Creek	50
Elk Basin	620
Frannie	1,270
Garland	2,570
Grass Creek	2,130
Hamilton dome	1,320
Hidden dome	110
Hudson	200
LaBarge	880
Lance Creek	12,580
Lost Soldier	1,640
Medicine	2,970
Mule Creek	80
Midway	30
Oregon Basin	4,740
Osage	780
Pilot Butte	10
Quealy dome	770
Rock River	1,470
South Casper	90
Spindletop	30
Poison Spider	350
Teapot	20
Warm Springs	140
Wertz	990
Total Wyoming	57,690

MONTANA

Border	70
Cat Creek	610
Cut Bank	7,560
Dry Creek	240
Kevin-Sunburst	3,650
Pondera	570
Total Montana	12,700

COLORADO

Florence	140
Fort Collins and Wellington	340
Iles dome	1,840
Moffat	280
Orchard	30
Rangely	90
Tow Creek	180
Price	490
Total Colorado	3,390

NEW MEXICO

Cooper	4,920
Eaves	910
Eunice	25,670
Hardy	2,600
Hobbs	14,100
Jal	1,050
Langlie	4,560
Lynch	580
Lynn	870
Mattix	3,320
Monument	26,410
North Lynch	40
Penrose	5,680
Rhoades	160
Skelly	1,940
South Eunice	3,150
Vacuum	4,160
Artesia-Maljamar	4,530
Getty	300
Hogback	200
Rattlesnake	760
Table Mesa	90
Total New Mexico	106,000
Total Rocky Mountain region	179,780

Market Record of Active Oil Stocks

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City, Member New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1938 High	1938 Low	Week ending Sept. 24 High	Week ending Sept. 24 Low	Week ending Sept. 24 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Com. sh. earn. 1937	Com. sh. earn. 1936	Dividends paid in 1937	1937 High	1937 Low	1936 High	1936 Low
78	55	68¼	63	63	Amerada Corp.	788,675	N.P.	50cQ	7-30-38	$3.04	$2.52	$2.00	114⅞	51½	125½	75
27⅝	17¾	22⅝	21	21½	Atlantic Refining	2,663,999	$25	25cQ	9-15-38	3.51	2.59	1.00	37	18	35⅛	26⅝
23⅜	12⅛	18⅝	15½	17½	Barber Asphalt Co.	390,223	$10	75c	12-16-37	1.91	1.14	1.00	43⅜	10⅛	38½	21
21⅝	10⅛	17	15	15½	Barnsdall Oil Co.	2,250,344	$5	25cQ	8-1-38	0.85	1.01	1.00	35¼	10	28¼	14⅛
10¾	7	8⅞	8	8⅜	Consolidated Oil Corp.	13,915,167	N.P.	20cQ	11-15-38	1.48	1.18	.90	17⅞	7	17¼	11½
35⅜	21¼	29⅞	26⅝	27⅝	Continental Oil of Delaware	4,682,583	$5	25cQ	9-30-38	2.98	2.05	1.50	49	24	44⅜	28⅛
9⅜	5	7⅝	6¼	6⅜	Houston Oil (new)	1,098,618	$25	....	10-17-30	0.94	—0.03	....	17⅝	4⅜	13⅞	6⅜
22⅝	12¼	17	15	15⅛	Mid-Continent Petroleum	1,857,912	$10	25c	6-1-38	2.86	2.57	1.50	35⅝	14	30⅞	17¼
17⅜	10⅝	13½	13¼	13¼	Mission Corporation	1,382,945	$10	$1	6-29-38	1.31	0.48	1.25	34	15	29⅞	16⅜
23	12½	15⅜	12½	13⅞	National Supply	1,155,170	$10	$2 pf.‡	12-22-37	4.90	2.02	(‡)	41⅜	17⅝	75½	19⅞
14⅞	8⅞	10	9	9¼	Ohio Oil Co.	6,563,377	N.P.	50c	12-15-37	1.30	0.70	1.00	22⅞	8	18	12⅛
15⅞	10¼	11½	11	11	Pacific Western Oil	1,000,000	N.P.	75c	12-15-37	1.39	1.58	.75	29¾	11⅜	23½	11⅜
9¼	7	..	..	..	Pan American Pet. & Trans.	4,702,945	$5	$1*	12-21-37	1.18	0.52	1.00	17⅛	7	20⅝	12¼
44⅜	27¼	39⅞	35⅜	37⅛	Phillips Petroleum	4,449,052	N.P.	50cQ	9-1-38	5.42	4.02	2.75	64	30⅛	52⅜	33⅛
25⅜	15	21¾	20½	20½	Plymouth Oil Co.	1,029,800	$5	35cQ	6-30-38	2.85	1.65	1.65	29⅞	13	27¾	11⅞
13½	8¼	10¼	8⅝	9	Pure Oil Co.	3,285,120	N.P.	25c	12-1-37	2.15	1.63	.25	24⅜	8⅜	27⅞	16
8⅜	5	7¼	6⅛	6¼	Richfield Oil Corp.	3,896,638	N.P.	25c	12-24-37	0.35	....	.25	6½	4⅛	..	..
27½	15½	19⅜	18	18⅜	Seaboard Oil of Delaware	1,244,383	N.P.	25cQ	9-15-38	1.97	2.00	1.00	54⅛	16	44	30½
18⅜	10	15½	13¼	13⅜	Shell Union Oil	13,070,625	N.P.	35c	7-15-38	1.44	1.57	1.00	34⅜	14⅞	28¼	14⅜
34⅜	18½	24	20	23⅛	Skelly Oil	1,003,949	$15	50c	6-25-38	6.07	4.42	1.50	60⅝	26½	47⅜	19½
16⅜	10⅜	13⅝	12⅜	12⅜	Socony-Vacuum	31,151,071	$15	25c	9-15-38	1.82	1.38	.80	23¼	13	17½	12½
34⅞	25⅛	30	27⅝	29	Standard Oil of California	13,014,754	N.P.	35cQ†	9-15-38	3.17	1.79	2.00	50	27⅛	47⅝	35
35½	24⅜	28¾	27⅜	28	Standard Oil (Indiana)	15,267,030	$25	25cQ	9-15-38	3.66	3.09	2.30	50	26½	48½	32¾
42	32½	..	..	..	Standard Oil of Kansas	112,837	$10	$5	12-20-37	6.93	1.91	5.00	43	30⅝	31	25
58⅜	39¾	53½	48¼	49½	Standard Oil of New Jersey	26,224,767	$25	$1SA†	6-15-38	5.64	3.73	2.50	76	42	70⅜	51⅛
59	45	52	51	52	Sun Oil	2,316,484	N.P.	25cQ	9-15-38	3.86	3.25	$1 & 8% stk.	77½	44½	91	70
4¼	1¾	3	2½	2⅞	Superior Oil Corp.	1,388,079	$1	....	.....	0.32	0.14	....	7¾	1½	6¾	3
49⅝	32⅝	43⅜	40⅝	42⅛	Texas Corp.	10,875,006	$25	50cQ	10-1-38	5.02	4.10	2.25	65⅛	34¾	55¼	28⅞
5¼	2⅝	4⅛	3½	3¾	Texas Gulf Producing Co.	888,138	N.P.	10c	12-23-37	0.68	0.93	.10	9⅝	2	8⅞	4⅜
12½	7	10⅛	9¼	9½	Texas Pacific Coal & Oil	888,237	$10	10c	9-1-38	1.11	0.72	.40	16⅝	5⅜	15¼	7½
15¾	10⅛	13	12⅛	12¾	Tide Water Associated	6,369,175	$10	25cQ	9-1-38	2.08	1.03	1.20	21⅝	13⅛	21⅜	14¾
22½	17⅛	20⅝	19½	20¼	Union Oil of California	4,666,270	$25	30cQ	8-10-38	2.58	1.40	1.40	28¼	17½	28½	20⅜
23½	20	20	20	20	Union Tank Car Co.	1,200,000	N.P.	30cQ	9-1-38	1.70	1.76	1.60	31½	22	31⅝	22⅝
3½	1⅝	2½	2⅜	2⅜	Wilcox Oil & Gas	506,522	$5	...	5-10-28	0.24	—0.06	....	6¼	1⅜	5¼	2⅜

*Payable in 3½% notes. †Includes extras. ‡One-tenth share $2 preferred stock.

New York Curb Exchange

1938 High	1938 Low	Week ending Sept. 24 High	Week ending Sept. 24 Low	Week ending Sept. 24 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Com. sh. earn. 1937	Com. sh. earn. 1936	Dividends paid in 1937	1937 High	1937 Low	1936 High	1936 Low
11¾	5	9⅜	8½	8⅞	American Republic Corp.	1,308,049	$10	10c	7-11-38	$0.27	$0.28	$0.40	10	6⅝	..	..
10¼	5	6⅜	5⅛	5¼	Bridgeport Machine Co.	260,000	N.P.	$1.25	12-30-37	1.90	1.26	2.00§	21⅜	7	21	13¼
39	26	26½	26	26	Buckeye Pipe Line Co.	200,000	$50	25c	9-15-38	4.02	4.40	3.75	51½	36	50	39¾
113¾	97	113	111½	113	Chesebrough Mfg. Co.	120,000	$25	$1.50Q†	9-27-38	6.73	7.46	7.00	123	95½	124¾	105
11	5⅛	6¾	5¾	5¾	Cities Service (new)	3,714,317	$10	....	6-1-32	1.02	0.13	....	5⅝	1½	7⅜	3
2⅜	⅞	1⅛	1	1	Cosden Petroleum	462,551	$1	....	.....	0.19	....	....	5½	1½	4½	1½
27½	17½	19⅞	19¼	19¼	Creole Petroleum	6,975,383	$5	50cSA†	6-10-38	1.61	1.23	1.00	38¾	20¼	39	19⅞
10¼	5½	8	8	8	Darby Petroleum	351,390	$5	25cSA	7-15-38	1.36	1.26	.50	18⅝	6½	18⅛	9
3½	1¾	1¾	1¾	1¾	Derby Oil & Refining	263,162	N.P.	....	.....	1.34	0.66	....	8⅜	2¼	6¾	1⅞
31	19½	..	..	..	Eureka Pipe Line	50,000	$50	50c	8-1-38	—0.12	—0.62	4.00	47½	24½	47½	38½
46⅞	33	40	37½	37⅝	Gulf Oil Corp.	9,076,202	$25	25cQ	10-1-38	3.51	2.90	1.00	63½	33	59	36
72⅝	56	67	61½	61½	Humble Oil & Refining	8,987,840	N.P.	62½c	10-1-38	5.22	3.80	2.00	87	54⅞	80	57
19½	15	16⅜	15½	15⅝	Imperial Oil of Canada	26,965,078	N.P.	62½cSA†‡	6-1-38	0.98	0.95	1.25	24¼	14½	24½	19¾
9⅜	6⅝	7⅜	7	7	Indiana Pipe Line	300,000	$10	30c	5-14-38	1.03	1.00	.80	15	5⅜	9⅜	5½
31¼	23	25½	23	23¾	International Petroleum	14,324,088	N.P.	$1.25†‡	6-1-38	....	1.81	2.50	39½	23½	39⅝	32⅝
5	3	3⅜	3⅛	3⅛	Kirby Petroleum Co.	500,000	$1	10c	4-15-38	0.17	0.20	....	8¾	2⅝	5⅜	2⅝
25⅛	15⅝	21½	19½	19½	Lion Oil Refining	434,820	N.P.	25cQ	10-10-38	2.17	1.43	1.50	34	12½	17⅜	7⅜
10¼	6⅝	9¼	8⅝	8¾	Lone Star Gas	5,553,747	N.P.	20c	8-20-38	1.14	1.02	.60	14¼	5¼	14¼	9⅞
9⅜	6½	7½	7	7⅛	Louisiana Land & Exp.	2,977,449	N.P.	10cQ	9-15-38	0.58	0.64	.50	15¼	6⅜	15⅝	9⅞
9¼	6⅝	8⅛	8	8	Midwest Oil Co.	998,444	$10	50c	6-15-38	1.14	0.95	1.00	14⅝	6¼	..	..
5⅜	4½	5¼	5	5	Mountain Producers	1,593,584	$10	30cSA	6-15-38	0.76	0.62	.60	7⅛	4⅛	8⅝	5
14⅝	11½	12¼	11⅞	12¼	National Fuel Gas	3,810,183	N.P.	25cQ	10-15-38	0.96	1.19	1.00	19½	12	23	17⅝
9¼	6¾	6¾	6¾	6¾	National Transit	509,000	$12.50	35cSA	6-15-38	1.19	0.79	1.00	12½	7¼	15⅜	9¼
2⅝	1½	1⅝	1½	1⅝	New Mexico and Arizona	1,000,000	$1	1c	12-1-38	0.02	0.02	....	5	1⅛	6⅝	1⅝
4½	4	..	..	..	New York Transit	100,000	$5	15c	4-15-38	0.49	0.34	1.00	5⅜	3⅞	6¼	4¼
6	4	..	..	..	Northern Pipe Line	120,000	$10	20c	6-1-38	0.78	0.66	1.00	12¾	5¾	9⅜	4⅞
7⅜	3¾	4½	3⅞	4⅛	Pantepec Oil	2,441,142	$1	....	.....	....	0.05	....	9⅝	2¾	10⅛	3¼
3½	1⅝	2	1¾	1¾	Root Petroleum Co.	336,045	$1	25c	2-1-37	—0.17	0.45	.25	13¾	2	19¼	4½
4	2⅛	..	..	..	Ryan Consolidated	296,931	N.P.	....	.....	0.46	....	....	6½	2¼	4¾	1⅞
5⅜	3⅜	..	..	..	Southern Pipe Line	100,000	$10	15cSA	9-1-38	0.85	0.41	.45	7¼	3⅞	7⅞	3¼
39	28¾	32	30¾	31½	South Penn Oil	1,000,000	$25	37½cQ	9-30-38	4.64	3.59	3.65	56	35	44	32½
22¼	19	..	..	..	Southwest Penna. Pipe Lines	35,000	$50	50cQ	7-1-38	0.95	0.97	2.00	42	20	60	44
18¾	15	17½	16¾	16⅞	Standard Oil of Kentucky	2,604,790	$10	25c	9-13-38	1.60	1.46	1.50	21½	14¾	23⅜	17⅛
8¾	6⅛	7⅛	7⅛	7⅛	Standard Oil of Nebraska	166,403	$25	25c	3-29-37	—0.58	0.42	.25	13¾	8	14⅝	11
22¾	16¼	20	19½	19½	Standard Oil of Ohio	753,740	$25	25c	9-15-38	3.67	4.77	1.50	45	16	40	21¾
3¼	2⅛	2⅝	2⅜	2⅜	Sunray Oil	2,006,176	$1	10c	12-24-37	0.42	0.26	.25	4⅞	2	5	2⅝
5	3½	4¼	4¼	4¼	Texon Oil & Land	936,024	$2	15cQ	9-30-38	0.51	0.36	.45	7⅝	2	9¾	5⅝
7⅝	4¼	5½	4⅞	4⅞	Transwestern Oil Co.	750,000	$10	....	.....	0.48	0.06	....	13⅞	4⅝	..	..
5¼	2¾	3⅜	2⅞	3	United Gas Corp.	7,818,959	$1	...	.....	0.25	0.20	....	13⅜	3	10¾	4

†Includes extras. ‡Payable in Canadian funds. §Of which $1 was in preferred stock.

PERSONAL

JOHN S. ROSS, petroleum engineer at the U. S. Bureau of Mines Experiment Station in Bartlesville, Okla., is in Washington, D. C., assisting the bureau in completing the report on "Technology, Employment and Output per Man in Petroleum and Natural Gas Production," to be issued soon. He is associated with DR. O. E. KIESSLING of the bureau.

RAWLEIGH WARNER, vice president and treasurer of the Pure Oil Company, has been named sponsor division chairman for the 1938 campaign of the Community Fund of Chicago. He will direct a group of nearly 200 persons in the solicitation of special gifts. The petroleum division, one of the 60 industrial groups functioning in the campaign, contributed approximately $70,000 last year.

R. OGARRIO, director of the Texas Corporation and vice president in charge of production, has returned to the United States after spending several weeks in Italy, Great Britain, and other European countries.

A. A. HOLSTEN is in charge of the new geological office which the Stanolind Oil & Gas Company has established in Shreveport, La. CHARLES GOODSON has charge of the land department in the same office.

W. S. S. RODGERS, New York, president of the Texas Corporation, has been made chairman of the newly organized public relations committee of the American Petroleum Institute. The first meeting of the committee was held last Monday.

CECIL LALIKER, paleontologist for the Phillips Petroleum Company in Corpus Christi, Tex., has resigned to accept an assistant professorship in the University of Oklahoma. J. B. WHARTON, of Amarillo, Tex., has been transferred from Amarillo to replace Mr. Laliker.

E. I. HANLON, chairman of the board of Hanlon-Buchanan, Inc., Tulsa, who left for a European tour last June, is sending messages to friends back home from points which have become centers of war preparation, including cities in Germany and France. He is leaving war news to the newspaper correspondents.

COL. E. WALTERS, credited with selling more property at auction than any other one man, has been selected as auctioneer for the Auction Board of Trade sales of oil and gas properties, fee lands and royalties, beginning September 30 in Tulsa. Colonel Walters' auction sales total $176,373,550. His experience covers 30 years. His home is in Skeedee, Okla.

ROY H. ODOM, the new chief draftsman for the Louisiana Department of Conservation, is now working in the Shreveport district temporarily. Until recently he was with the Soil Conservation Service, and his experience includes several years with the government and with oil companies in Louisiana and the East.

GEORGE W. STRAKE, Houston, Tex., president of the Strake Oil Corporation and discoverer of the Conroe field in Texas, last week purchased Glen Eyrie, estate of the late General William J. Palmer, founder of Colorado Springs, Colo. The sale is said to have involved $350,000. Glen Eyrie covers approximately 8,000 acres bordering on the front range of the mountains north of the Garden of the Gods, Colorado Springs. In Queens Canyon is a medieval-style castle.

JOHN T. HAYWARD, chief engineer of the Barnsdall Oil Company, Tulsa, sailing his 16-foot snipe sailboat "Senta," came in second in the race for the Jones Memorial Trophy at Gulfport, Miss. Mr. Hayward, whose enthusiasm for sailing has made it his hobby, spent his vacation at Gulfport in order to participate in the contest.

J. L. LATIMER, Dallas, Tex., vice president of the Magnolia Pipe Line Company; J. H. WOOD, JR., Dallas, vice president of the Atlantic Pipe Line Company; F. E. WATERFIELD, JR., Tulsa, chief engineer of the Oklahoma Pipe Line Company; J. C. STIRLING, Tulsa, engineer of the Stanolind Pipe Line Company; FRITZ KARGE, Los Angeles, transportation engineer of the Union Oil Company of California, and E. L. ADAMS, Los Angeles, vice president of the General Pipe Line Company of California, subsidiary of General Petroleum Corporation, have been appointed members of the American Petroleum Institute's Division of Production topical committee on pipe line technology.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

F. A. Leovy, vice president of Gulf Pipe Line Company and in charge of production, pipe line and storage for the Gulf and Guffey-Gillespie interests, will move his headquarters from Beaumont, Tex., to Pittsburgh, Pa. Underwood Nazro, assistant to the vice president, will succeed Mr. Leovy in charge at Beaumont. The changes will take place January 1, 1914.

The federal Government has begun its fight in the Supreme Court of the United States to establish the constitutionality of the provision of the Interstate Commerce Commission making pipe lines common carriers.

20 YEARS AGO

Mexican Fuel Co. completes a 30,000-barrel well in the Topila pool in the Tampico district in Mexico.

The famous Russian oil town of Baku has been captured by the Turkish army according to cable dispatches.

Mid-West Refining Company completes an 8,000-barrel well in Section 25-40-79 in the Salt Creek field in Wyoming.

The Texas Company was the largest producer in Texas in the second quarter of 1918, according to official state report. Its gross production was 1,814,538 barrels. Gulf Production Company was second with 1,431,981 barrels. Humble Oil & Refining Company produced 1,248,604 barrels and Magnolia Petroleum Company 781,884 barrels.

10 YEARS AGO

At the Osage lease sale on September 27, 17,432 acres were sold at an average price of $2.77 per acre. Thirteen quarter-sections went for an average of 62½ cents per acre.

U. DeB. Daly is elected president of the Roxana Petroleum Corporation (Royal Dutch Shell).

The deepest 10-inch hole in the world is United Natural Gas Company's test near Kane, Pa., which is drilling at 7,907 feet.

Hendrick pool in Winkler County, Texas, has passed its potential production peak.

J. C. SMITH, president of the Oil Trade Association of New York, was official host at the fall sports outing last week at the Pelham Country Club.

J. C. WATSON, secretary of the West Central Texas Oil and Gas Association, spoke before the Lions Club of Coleman, Tex., last week on the value of the oil and gas industry to that region.

DR. E. R. WEIDLEIN, director of Mellon Institute, Pittsburgh, Pa., has announced the establishment of an Industrial Fellowship by the Elgin National Watch Company, Elgin, Ill. One of the first subjects of investigation will be watch lubrication.

JOE H. RUSSELL, assistant to the vice president of the Gulf Oil Corporation in Houston, Tex., has returned to his desk after a successful hunting trip in Wyoming. He was accompanied by his son Joe Russell, Jr. Their trophies included moose, antelope, elk and bear.

CLAY TALLMAN, general attorney for the Stanolind Oil & Gas Company, Tulsa, accompanied by Mrs. Tallman, is on a Caribbean cruise, which is scheduled to include Havana, Cristobal, Almirante, and Port Limon. Mr. Tallman, who had been in poor health, sent a radio message to friends that he was feeling much better and was enjoying the trip.

A. W. TRUSTY, chief chemist for the Arkansas Fuel Oil Company, Shreveport, La., is in charge of a night course on petroleum refining at Centenary College. In the same school, H. W. BELL, of the Rodessa Operators Committee, will instruct classes in production and drilling, and C. R. McKNIGHT, geologist with Arkansas Fuel Oil Company, will have charge of geology courses.

PARAGRAPHS

C. A. HALSEY, head of the boilermaker department of the Standard Oil Company of Indiana's Wood River, Ill., refinery, who celebrated his fiftieth service anniversary last November, has retired on an annuity. Mr. Halsey—"Bert" to his friends—drove the first rivet in the first tank erected at the refinery. Traveling out of Whiting, Ind., for several years previous to 1907, doing supervisory work in refinery construction, he went to Wood River 31 years ago, helped in building the refinery and then was promoted to the post which he held on his retirement.

CHARLES C. BUTTERFIELD, Newark, Ohio, dean of Pure Oil Company employes, completing 46 years of continuous service with that company or its predecessors, topped the list of seven veteran employes of the Heath refinery in Newark, who were honored last week at a dinner meeting of fellow workers, refinery heads and representatives of company officials. The group will retire October 1. CHARLES A. WARD, of Columbus, Ohio, editor of company publications, presided.

H. DIGNOWITY, state supervisor of technical training for the Humble Oil & Refining Company in Texas, and P. A. WASHER, head of the company's Baytown refinery technical service training division, were the principal speakers at the opening last week of classes in the world's largest petroleum technical service training school, at Lee Institute, affiliated with Robert E. Lee High School and Lee Junior College, Houston, Tex.

LEE R. COWLES will assume the position of traffic manager of the Standard Oil Company of Indiana October 1. On the same date FRED S. HOLLANDS, acting traffic manager since the death of Robert H. McElroy last June, will be retired on annuity after 20 years' service. ROBERT W. FYFE will continue as assistant traffic manager. Mr. Cowles joined the company last year.

WAITE PHILLIPS, independent oil operator and philanthropist, has given his palatial residence, Philbrook, to Tulsa for use as an art and Indian museum, it was announced this week. Mr. and Mrs. Phillips propose organization of the Southwestern Art Association as a nonprofit corporation to operate the museum. The donors specify that the proposed association shall transfer to Tulsa all the land contained in the estate, approximating 23 acres, to be maintained as a public park and botanical garden. An additional 5 acres adjoining Philbrook is offered subject to the removal of restrictions. The names, Philbrook Art Museum and Philbrook Park, are suggested. When they built their residence in 1926 Mr. and Mrs. Phillips designed it with a view to its possible use for some civic purpose later. They plan to occupy a penthouse residence atop the Philcade Building.

DR. GEORGE C. BRANNER, state geologist of Arkansas, went to Washington, D. C., to attend a session of the planning technicians' conference of the national resources committee.

B. B. BROOKS, former governor of Wyoming, was reelected president of the Consolidated Royalty Company at the annual meeting in Casper, Wyo. Returned to office also were C. B. RICHARDSON, vice president, and L. A. PARKER, secretary.

GUY STEVENS, director of the Kuwait Oil Company and foreign liaison officer for the Gulf Oil Corporation exploration and development interests, is in Europe, having arrived in England September 6. He will be absent from his New York office a month or longer.

CHARLES M. ANDERSON is president, ELMER M. RUDOLPH vice president, and ARNOLD JACOBWITZ secretary-treasurer of the newly formed Anderson-Rudolph Corporation, Buffalo, N. Y., which has taken over the plant and business of the former Weimert-Anderson Oil Corporation. The new firm will continue business as oil and grease distributor.

R. B. DOWNING, Wichita, Kans., geologist, wounded recently through the accidental discharge of a pistol, was reported greatly improved this week at Wesley Hospital, Wichita. Mr. Downing was checking geological formations at a test near Hill City, Kans., and he participated with other men on the lease in target shooting. As he was about to take his turn he unintentionally pressed the trigger of his pistol. The bullet entered the calf of his leg, lodging near the ankle after chipping the leg bone. Danger of infection is believed past.

Going Higher Isn't New

Torrey H. Webb recently was elevated to vice president and general manager of the Texas Company (California), but going higher is no new experience to him. In fact, he flew America's first army air mail, that distinction falling to him while he was serving in the United States Aviation Corps.

TORREY H. WEBB

Upon graduating from Columbia University, New York, with a degree in mining engineering young Webb promptly enlisted for service in the World War. He was mustered out in 1919 with the rank of captain and lost no time getting work in the oil fields of Texas. He was not choosy about jobs, and he had a variety. In 1922 he joined Ventura Consolidated Oil Fields, and with the acquisition of that company by the California Petroleum Corporation he held posts successively in the transportation, refining, and land and leasing departments.

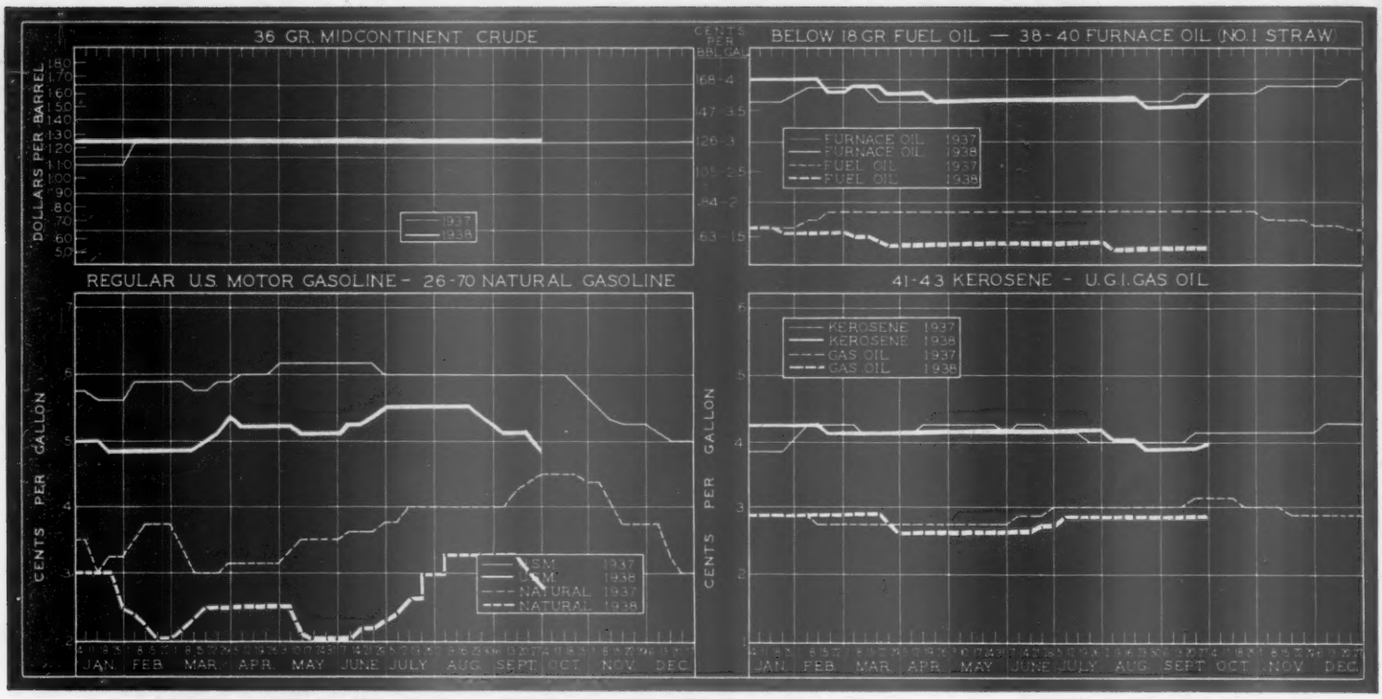
When California Petroleum was received into the Texaco family Mr. Webb was made assistant to the president and general manager of the Texas Company (California), at the same time being named a director. He continued in this capacity until his advancement to a vice presidency, with oversight of the company's western operations. Mr. Webb was born in Gazelle, a town in far-north Siskiyou County, California, credited with a teeming population of 250. This was on December 7, 1892, which places him in his new office at the age of 45. He resides in Los Angeles.

HARRIS ALLEN, geological department of the Phillips Petroleum Company offices in Amarillo, Tex., has been transferred to Mattoon, Ill. He will be succeeded in Amarillo by R. K. LANYON, formerly in the Wichita Falls, Tex., office of the company.

PAUL E. TALIAFERRO, vice president and general attorney of the Sunray Oil Company, has returned to his office in Tulsa, following an extended vacation trip on which he was accompanied by Mrs. Taliaferro. The two visited the Grand Canyon, Painted Desert, Boulder Dam, Long Beach, Catalina, Sequoyah National Park, Salt Lake City, and Colorado Springs.

DR. C. N. GOULD, former head of the Oklahoma Geological Survey and now attached to the U. S. Bureau of Mines in Santa Fe, N. M., will head a field trip of the Panhandle Geological Society early in October, if plans formulated at a meeting of the organization in Amarillo, Tex., last week, are carried out. The trip will cover Northeast New Mexico, an area with which Doctor Gould is familiar, and it is hoped to have him lead the visitors.

W. LEE O'DANIEL, Democratic candidate for governor of Texas, will be the principal speaker October 27 at the annual convention of the Texas division of the Mid-Continent Oil and Gas Association, in San Antonio October 27 to 29. CHARLES P. McGAHA, president of the division, will be a speaker also. Entertainment features are in the hands of a committee headed by AL BUCHANAN, San Antonio, independent operator and vice president for Southwest Texas. Twenty-five cities will be represented by about 250 players in the association's annual golf tournament for the W. B. Hamilton trophy.



Representative Mid-Continent Quotations on Crude Oil and Refined Products, Basis Oklahoma (Group 3)

Gasoline Softer in Group 3 Territory But Heating Oils Develop Strength

By T. F. SMILEY

There is a bottom to every falling market, according to long-established belief, but as refinery sales managers in the Group 3 area watched gasoline continue its discouraged drift to lower levels they weren't so sure about it this week. The furnace oils and their sister products, the tractor fuels, afforded a ray of cheer, and wax was doing well. But the rest of the market, especially the heavy burning oils and the lubricants, presented an unhappy scene.

Buyers Having Their Own Way

Buyers were having things their own way in the motor fuel division. Prices bore only a remote relation to the cost of production. Reports indicated that low-octane material was obtainable from some of the more hard-pressed refiners for resale at 3⅝ cents. The better grades were being slashed too. Only a small number of refiners were dumping their product in this fashion, it was said; and dispiriting as conditions admittedly were, these scattered sales apparently did not represent the market.

Explanations offered for the low state of the gasoline market varied, but opinion was general that in the absence of an early upturn many plant shutdowns were inevitable. All the small refiners and some of the larger ones were trying busily to keep their output moving, without being overparticular about prices. Although some refiners said lower prices for crude would help them, their fear that the lower prices might actually be announced drove them to renewed efforts to get rid of gasoline made from crude bought at prevailing levels.

Under normal conditions September is one of the best months in the year for the refiner. Gasoline consumption, though below that of July and August, is well sustained. Summer prices often extend through the month and beyond. At the same time demand for heating oils is rising. But owing chiefly to the demoralized condition of the gasoline market, September records this year are written largely in red ink. Informed observers assert that not one refiner in the Group 3 territory is making money and that some are losing around 25 cents on every barrel of crude processed.

Critical conditions in Europe are contributing to the uncertainties of the petroleum market. Inquiries for three cargoes of aviation gasoline were reported this week, and cables are being received daily asking for prices on crude.

The light fuels were in brisk demand and prices were stiffening. Growing scarcity was reported in the grades most used for domestic heating. Huge stocks, which plague the motor fuel market, are not a similar blight in the light heating oils. In many instances inventories left over from last year were worked over into tractor fuels when work on the farms started in the spring. Cool weather is lighting domestic burners in northern regions, and fall work in agricultural areas is stimulating the call for tractor fuels and kerosene. There is expected to be a steadily rising demand for the light distillates in coming weeks. The position of low-octane gasoline should show improvement too as more tractors are put to work.

Unsettled Market in Naturals

Natural gasoline, which has been experiencing an unsettled market, lost a quarter-cent in Oklahoma Tuesday of this week, making quotations coincide with those prevailing in Texas for the past two weeks or so. Movement was reported slightly better, and many orders were accompanied by a request that the material be rushed.

The lubricant group was dragging, and refiners who had hoped for higher prices by this time expressed disappointment. Although some sales managers believed the heavy industrial oils were showing a little more life, it still was possible for the buyer to name just about his own price. U.G.I. gas oil was holding. Wax was strong at unchanged quotations.

Refined Oil Market Barometer

Gasoline weaker, with quotations much lower than they were a year ago. Some observers do not look for pronounced recovery till next spring unless European developments create an unusual export business. Heating oils active, with quotations rising, as cooler weather quickens demand. Heavy industrial oils stagnant. Natural gasoline unsteady, but movement slightly improved.

MID-CONTINENT. Gasoline weaker. Naturals unsteady. Heating oils active. Wax firm.

EAST COAST. Gasoline consumption reduced by storm conditions. Light fuels stronger.

GULF COAST. General market inactive. Prices unchanged.

CALIFORNIA. Gasoline soft. Fuel oil weak. Outlook for price stabilization encouraging.

PENNSYLVANIA. Gasoline easier. Fuel oil gaining. Demand for neutrals continues brisk.

CHICAGO. Gasoline consumption high, but market soft. Fuel oils increasingly active.

Atlantic Coast Consumption Is Heavily Cut by Hurricane

By H. STANLEY NORMAN

NEW YORK, Sept. 27.—Motor fuel consumption along the northern Atlantic seacoast was leveled to midwinter proportions or less during the last half of the past week when the hurricane buffeted the coastline from New York to Boston, temporarily closing innumerable highways. New England highways in many instances, particularly those focusing on Boston, remained unfit for travel up to and including the past week-end. Included in the property damage where the storm was most severe were crushed automobiles pinned beneath uprooted trees. Water-front oil storage was either destroyed or the contents of tanks so badly contaminated that many thousands of gallons of gasoline, fuel oil, marine Diesel oil and other products were lost to the owners. It was impossible to get an accurate check on the extent of flood and wind damage to oil company bulk plants at seacoast terminals. Most of the plants destroyed were small. None of the larger eastern terminals was more than slightly damaged in the New York Harbor vicinity.

From one to two weeks will be required to rehabilitate highways most seriously damaged in the New England section. The loss of two weeks of weather in which driving conditions are normally moderately satisfactory may adversely affect motor fuel consumption in that section. Even before the storm hit the Boston area gasoline prices were reported easier. Some reports were current that 65-octane motor fuel was available in the Boston open tankcar market for 6 to 6¼ cents per gallon. Major suppliers, however, said that an unimportant volume of the trade was being transacted at the lower figure and that otherwise prices were unchanged from the preceding week. Earlier reports that Philadelphia tankcar prices for motor fuel were a quarter to a half cent per gallon lower than in New York were also discounted last week. As in Boston, the larger Philadelphia suppliers said their tankcar quotations were unchanged at 6⅛ cents per gallon for 65-octane material.

The Pennsylvania retail price disturbance and lower primary markets received official recognition this week when on Monday, September 26, Standard Oil Co. of New Jersey lowered prices on Essolene under its minimum retail resale contracts. Under the revised schedule, minimum retail resale price on Essolene was set at 15.4 cents per gallon throughout New Jersey, excepting at Trenton and in Cumberland County where competitive conditions had enforced an earlier adjustment. The company announced that its posted tank-wagon price would be 12.9 cents and that the net delivered price to divided dealers would be 12.4 cents while that to undivided dealers would be 11.9 cents. The prices include state and federal taxes. The company announced that it considered the primary markets down about one-half cent per gallon and that its policy involved passing this margin on to the consumer. Other companies either followed this change, had previously lowered prices or said that they probably would meet the reduction.

The extent to which July gasoline consumption was retarded in New York by nearly two weeks of rain was disclosed last week in the motor fuel tax report. Taxable motor fuel sales of 168,391,120 gallons in New York for July decreased 9,128,429 from the total of 177,519,549 gallons sold in July, 1937. A loss of 10,216,798 gallons was noted in reporting monthly total quantity sales of 177,042,274 gallons, including both taxable and nontaxable fuel. There was a total loss of 25,427,288 gallons reported for the first seven months of this year compared with the same period in 1937.

In the New York area alone the demand for motor fuel suffered only slightly from the tropical storm. The day after the hurricane, September 22, was bright and moderately warm and refiners reported one of the most satisfactory business days in weeks. One benefit accruing to oil suppliers in this area was the fact that railroad facilities were also damaged forcing numerous commuters to use private means of transportation between homes in New Jersey, Westchester, Connecticut and New York.

Occasional sales of gasoline at 6 cents per gallon in barges and at 6⅛ cents in tankcars were reported last week in the New York Harbor market, but a large bulk of the business on 65-octane grades is transacted at 6¼ to 6½ cents per gallon.

Conservatives in the gasoline market found justification for their attitude in the fact that stocks were reduced more than 1,600,000 bbls. during the week ended September 17, which probably included at least part of the business stimulated by the triple holiday September 3, 4 and 5. However, it was also accepted as an indication that further slices can be taken from motor fuel inventories under current refinery operating schedules, if weather is even moderately favorable to driving.

From national headquarters at Washington of the American Automobile Association comes a report that winter operation of motor vehicles is expected to set a new all-time record in the winter of 1938-39. The AAA points out that numerous people delayed their vacations this summer because of the recession and because of unfavorable weather prevailing in popular resort sections, notably New England. Auto owners falling in these general classifications are expected to take their vacations in the fall or winter months into areas with moderate climates.

The AAA also points out that the San Francisco fair opening in February and the New York World Fair opening in April, 1939, will attract motorists from all sections of the country, possibly stimulating winter gasoline sales to a point not normally reached until late in May or June.

The demoralized retail price situation prevailing for several weeks in Philadelphia shows no sign of immediate correction. Nearly 5,000 dealers in the Philadelphia marketing area have signed a petition circulated by the Metropolitan Philadelphia Association of Petroleum Retailers urging suppliers to operate under the Pennsylvania fair trade act.

With practically all domestic and public building oil burners in operation last week, the demand for light fuel oils quickened another notch. All burner operators are at least on a part day schedule in this territory while further north continual heating is required by the prevailing damp, cool weather. All apartment houses are operating their burners on an early-morning, late-evening and night schedule, with possibly six to eight hours during the middle of the day when heating is not required. These conditions have been reflected in more spirited demand for light fuel oils and a general improvement in tone of the market, although no upswings have been reported. Most suppliers are offering No. 2 fuel oil to the tankcar trade at 4¼ cents per gallon.

Kerosene is also in improved de-

(Continued on Page 120)

A. P. I. Weekly Refinery Statistics

Week Ending September 24, 1938

	Capacity reporting (per cent)	Daily crude runs (bbls.)	Total gasoline stocks	Gas oil and fuel oil stocks
East Coast	100.0	476,000	18,510,000	15,681,000
Appalachian	85.9	103,000	2,935,000	943,000
Indiana, Illinois, and Kentucky	89.0	440,000	10,381,000	9,400,000
Oklahoma, Kansas, and Missouri	81.6	267,000	5,995,000	4,531,000
Inland Texas	50.3	106,000	1,643,000	2,029,000
Texas Gulf	88.9	780,000	9,934,000	14,064,000
Louisiana Gulf	97.3	112,000	2,075,000	3,167,000
North Louisiana and Arkansas	55.0	36,000	549,000	855,000
Rocky Mountains	54.2	49,000	1,154,000	816,000
California	90.0	512,000	11,889,000	95,772,000
Total reported	85.0	2,881,000	65,065,000	147,258,000
Estimated unreported	.....	339,000	3,540,000	3,210,000
*Estimated total	.....	3,220,000	68,605,000	150,468,000
*Estimated total, previous week	.....	3,235,000	69,244,000	149,388,000
*September 25, 1937	.....	3,455,000	65,620,000	116,472,000

*Bureau of Mines, currently estimated.

Stocks of Crude Oil in the United States

(BUREAU OF MINES ESTIMATES)

Week ending September 10, 1938	282,457,000 barrels
Week ending September 3, 1938	284,919,000 barrels
Week ending September 11, 1937	309,054,000 barrels

Figures do not include stocks of heavy, unrefinable California crude.

Retail Oil Markets

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of September 27, 1938

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county and city taxes. The gasoline is the regular or standard grade. In most areas lower grades and a premium grade also are available.

Standard Oil Co. (Indiana)

	Gasoline Tank wag.	Gasoline Dlr.	Gasoline Inc. tax	Kero. tank-wag.
Chicago, Ill.	15.6	13.6	4.0	10.5
Decatur	15.6	14.1	4.0	10.5
Joliet	15.6	14.1	4.0	10.5
Peoria	15.6	14.1	4.0	10.5
Quincy	15.4	12.9	4.0	10.3
Davenport, Ia.	15.6	14.1	4.0	‡10.5
Des Moines	15.4	13.9	4.0	‡10.3
Mason City	15.8	14.3	4.0	‡10.7
Duluth, Minn.	17.4	15.9	5.0	11.3
Mankato	17.0	15.5	5.0	10.9
Minneapolis	17.0	15.5	5.0	10.9
LaCrosse, Wis.	17.0	15.5	5.0	10.9
Green Bay	17.4	15.9	5.0	10.3
Milwaukee	16.8	15.3	5.0	10.7
Detroit, Mich.	14.3	12.8	4.0	9.0
Grand Rapids	14.8	13.5	4.0	9.7
Saginaw	16.3	14.8	4.0	9.3
Evansville, Ind.	17.1	15.6	5.0	†11.0
Indianapolis	17.3	15.8	5.0	†10.0
South Bend	17.6	16.1	5.0	†9.0
Fargo, N. Dak.	17.2	15.7	4.0	12.1
Minot	18.5	17.0	4.0	13.4
Huron, S. Dak.	17.5	16.0	5.0	11.4
Kans. City, Mo.*	14.9	13.4	4.0	8.5
St. Louis*	15.2	13.7	4.0	10.1
St. Joseph*	14.9	13.4	4.0	9.8
Wichita, Kans.	14.4	10.6	4.0	7.8

*State tax 2 cents, 1-cent city tax and 1-cent federal tax. †Does not include 4-cent state tax. ‡Does not include 3-cent state tax.

Exclusive of state general sales taxes.

Discounts to commercial consumers: On purchases per month off tank-wagon prices: 1,000 gallons or more, 1.5 cents off; minimum delivery 25 gallons.

Stanolex Fuel Oil in Chicago

Effective August 1, 1938, f.o.b. Chicago tank-wagon prices: Standard range oil, 1-99 gallons, 9 cents; 100-149 gallons, 8.5 cents; 150 gallons and over, 8 cents. Stanolex fuel oil No. 1, 1-149 gallons, 8 cents; 150-399 gallons, 7 cents; 400 gallons and over, 6.5 cents. Stanolex furnace oil, 1-149 gallons, 8 cents; 150-399 gallons, 7 cents; 400 gallons and over, 6.5 cents. Stanolex grade A, 1-399 gallons, 5 cents; 400 gallons and over, 4 cents. Stanolex grade B, 1-799, gallons 5 cents; 800 gallons and over, 4 cents.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline Tank-wag. dlr.	Gasoline Tank-car con'r.	Gasoline Inc. tax	Kero tank wag.
Atl'tic City, N. J.	13.4	11.4	4.0	8.0
Newark	13.4	11.4	4.0	8.0
Annapolis, Md.	14.85	13.35	5.0	9.5
Baltimore	14.25	12.75	5.0	9.0
Cumberland	16.65	14.15	5.0	10.0
Wash'g'n, D. C.	12.5	11.0	3.0	9.5
Danville, Va.	16.95	14.45	6.0	12.9
Norfolk	15.75	13.25	6.0	11.5
Petersburg	16.05	13.55	6.0	11.7
Richmond	16.05	13.55	6.0	11.7
Roanoke	17.25	14.75	6.0	12.9
Charles'n, W. V.	17.05	14.55	6.0	12.6
Parkersburg	15.35	13.85	6.0	11.2
Wheeling	16.25	14.85	6.0	12.2
Charlotte, N. C.	18.65	16.15	7.0	12.1
Hickory	19.15	16.65	7.0	12.5
Mt. Airy	18.95	16.45	7.0	12.3
Raleigh	18.25	15.75	7.0	11.6
Salisbury	18.75	16.25	7.0	12.2
Charleston, S. C.	17.25	14.75	7.0	10.6
Columbia	18.25	15.75	7.0	11.6
Spartanburg	18.95	16.45	7.0	12.4

Price basis to commercial consumers, effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia; and March 12 in New Jersey: To contract accounts purchasing at least one full compartment at time by hose connection, on yearly purchases: From 2,500 to 100,000 gallons, consumer tank-wagon price at time and place of delivery; 100,000 gallons per year, consumer tankcar price plus .5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less .5 cent per gallon.

Effective May 15, 1937, in North and South Carolina, West Virginia and Virginia (except Arlington and Fairfax counties): Commercial consumers taking deliveries of 50 gallons (W. Va., 100 gallons) or more at one time will be billed at posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons (W. Va., 100 gallons) will be billed at 4 cents per gallon over posted consumer tank-wagon price. Generally the posted consumer tank-wagon price will be the equivalent to the dealer price less .5 cent per gallon.

Discount for kerosene, 1 cent off tank-wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except no discount in New Jersey.

Southern District

STANDARD OIL CO. OF KENTUCKY

	Gasoline Tank-wag.	Gasoline Net dlr.	Gasoline Inc. tax	Kero. tank-wag.
Atlanta, Ga.	19.0	16.0	7.0	12.0
Augusta	19.5	16.5	7.0	8.0
Macon	19.5	16.5	7.0	11.5
Savannah	18.0	15.0	7.0	10.0
Birm'ham, Ala.	21.5	18.5	8.0	12.0
Mobile	21.5	18.5	9.0	9.0
Montgomery	21.5	19.5	9.0	10.0
Jackson, Miss.	19.5	16.5	7.0	10.0
Vicksburg	20.0	17.0	7.0	9.5
Jacks'ville, Fla.	18.0	15.0	8.0	8.0
Miami	20.5	17.5	8.0	9.0
Pensacola	21.0	18.0	9.0	10.0
Tampa	18.0	15.0	8.0	8.5
Lexington, Ky.	19.5	16.5	6.0	10.0
Covington	18.0	15.0	6.0	10.5
Louisville	18.0	15.0	6.0	10.0
Paducah	18.0	15.0	6.0	10.0

*Includes 1-cent state tax.

Price basis to tank-wagon consumers: Effective January 4, 1937; 3 cents per gallon below tank-wagon price. Effective June 4, 1938, 2 cents per gallons discount eliminated from all kerosene markets in Mississippi, Alabama, Georgia, and Florida, markets being reduced correspondingly to a net basis.

Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax; and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon; Pensacola, Fla., has a city gasoline tax of 1 cent.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline Dealer	Gasoline Inc. tax	Kero. tank-wag.
Denver, Colo.	15.5	5.0	11.5
Grand Junction	19.0	5.0	15.0
Pueblo	16.5	5.0	10.5
Casper, Wyo.	17.0	5.0	11.5
Cheyenne	13.0	5.0	13.0
Butte, Mont.	19.5	6.0	15.5
Billings	19.0	6.0	13.0
Helena	20.0	6.0	15.5
Great Falls	19.0	6.0	15.5
Salt Lake City, Utah	17.0	5.0	16.0
Twin Falls, Idaho	21.0	6.0	18.0
Boise	21.5	6.0	18.0
Albuquerque, N. M.	17.5	*6.5	12.0

*Includes city tax of .5 cent.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline Tank-wag. con'r.	Gasoline Dlvided dlr.	Gasoline Inc. tax	Kero. tank-wag.
Ohio points	16.0	15.0	5.0	*13.0

*Includes state tax of 1 cent.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline T'wag. dealer	Gasoline T'car consr.	Gasoline Inc. tax	Kero. tank wag.
Albany	14.3	12.3	5.0	9.0
*Met. N. Y.:				
M'htt'n., Bronx	13.4	12.25	5.0	8.75
Staten Island	13.4	12.25	5.0	8.75
Q'ns. & Bklyn.	13.4	12.25	5.0	8.75
Buffalo	14.1	13.1	5.0	7.5
Rochester	15.0	13.2	5.0	8.5
Syracuse	14.0	12.9	5.0	9.0
Boston, Mass.	12.5	11.0	4.0	8.0
Portland, Me.	14.0	12.25	5.0	8.75
Manch'ter, N. H.	14.5	12.8	5.0	8.5
Burlington, Vt.	14.7	12.65	5.0	9.5

*Does not include 2 per cent city sales tax which is calculated on basis of net retail price exclusive of state and federal taxes. Metropolitan New York prices are undivided dealer prices; others are split dealer.

Price basis to undivided dealer: Posted dealer tank-wagon price less .5 cent. Price basis to commercial consumer: Effective Nov. 15, 1936, monthly purchases of 25,000 gallons and over, consumer tankcar prices at delivery point plus .5 cent per gallon; monthly purchases of 5,000 to 25,000 gallons, undivided dealer price at delivery point; monthly purchases under 5,000 gallons, pay divided dealer tank-wagon prices at delivery point.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline Tank-wag.	Gasoline Serv. sta.	Gasoline Inc. tax.	Kero. tank-wag.
San Francisco	17.5	18.5	4.0	11.5
Los Angeles	17.0	18.0	4.0	10.0
Fresno, Calif.	18.5	19.5	4.0	12.5
Phoenix, Ariz.	21.5	22.5	6.0	*17.5
Reno, Nev.	20.5	21.5	5.0	13.5
Portland, Ore.	20.0	21.0	6.0	13.5
Seattle, Wash.	20.0	21.0	6.0	13.5
Spokane	23.0	24.0	6.0	16.5
Tacoma	20.0	21.0	6.0	13.5

*Includes 5-cent state tax.

Discounts to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents; to split dealers, 2 cents. To commercial consumers: on tank-wagon price: on single deliveries of 40 gallons and over, advance quantity discount extended at time of delivery, 3 cents. Service station schedule applies on single deliveries less than 40 gallons. On kerosene in tankcar, transport truck and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank-wagon.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline Tank-wag.	Gasoline Dlr.	Gasoline Inc. tax	Kero. tank-wag.
Omaha	18.0	16.5	6.0	10.8
McCook	17.5	16.5	6.0	10.0
Norfolk	18.4	14.9	6.0	11.2
North Platte	18.4	15.4	6.0	11.0
Scottsbluff	19.5	18.0	6.0	12.3

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective Jan. 1, 1935

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline Tank-wag. dlr.	Gasoline Tank-car con'r.	Gasoline Inc. tax	Kero-tank-wag.
N. Orleans, La.	19.75	17.25	*10.0	†13.5
Baton Rouge	17.75	15.25	8.0	*10.5
Alexandria	17.75	15.25	8.0	12.5
Lafayette	16.0	15.5	8.0	12.5
Lake Charles	17.75	15.25	8.0	12.5
Shreveport	16.5	14.0	8.0	11.0
Knoxville, Tenn.	21.0	18.5	8.0	14.5
Memphis	19.0	16.5	8.0	12.5
Chattanooga	20.5	18.0	8.0	14.0
Nashville	20.0	17.5	8.0	11.5
Bristol	19.0	18.5	8.0	14.5

*Includes 2-cent parish tax. †Includes 1-cent parish tax and 1-cent state tax.

Price basis to commercial consumers: Effective May 15, 1937, deliveries of 50 gallons or more in one delivery takes posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons at one time pay posted consumer tank-wagon price plus 4 cents per gallon. Generally, the posted consumer tank-wagon price will be equivalent to the dealer price less .5 cent per gallon. Kerosene prices include 1-cent state tax.

Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO.

	Gasoline Tank-wag. dlr.	Gasoline Tank-car con'r.	Gasoline Inc. tax	Kero. tank-wag.
Philadel'hia, Pa.	13.75	12.25	5.0	10.0
Pittsburgh	15.0	13.0	5.0	10.5
Allentown	14.25	12.75	5.0	10.5
Erie	14.5	13.0	5.0	10.0
Scranton	14.5	13.0	5.0	10.5
Altoona	15.5	13.0	5.0	10.5
Dover, Del.	13.5	....	5.0	10.5
Wilmington	12.5	....	5.0	9.75
Springf'ld, Mass.	13.5	....	4.0	8.0
Worcester	13.0	....	4.0	8.5
Hartford, Conn.	13.6	....	4.0	7.0
New Haven	13.5	....	4.0	7.0
Providence, R. I.	13.0	....	4.0	8.0

Price basis to undivided dealers, dealer tank-wagon price less .5 cent per gallon. Price basis to commercial consumers in Pennsylvania and Delaware, effective March 11, 1937: Consumers under contract using 100,000 gallons or more per year full compartment hose deliveries, tankcar plus .5 cent. Consumers under contract using less than 100,000 gallons per year compartment hose deliveries, undivided dealer price. Consumers under contract less than full compartment delivery, consumers not under contract, less than full compartment delivery, and consumers not under contract full compartment delivery, divided dealer price. Less than 25 gallons, tank-wagon delivery, 4 cents per gallon above undivided dealer price.

Oklahoma and Arkansas

CONTINENTAL OIL CO

	Gasoline Dealer	Gasoline Inc. tax	Kero. tank-wag.
Muskogee, Okla.	14.5	5.0	7.0
Oklahoma City	13.5	5.0	7.0
Tulsa	12.0	5.0	7.0
Ft. Smith, Ark.	14.75	5.0	7.5
Little Rock	17.25	7.5	8.0
Texarkana	14.0	5.0	8.0

Texas

	Gasoline Tank-wag.	Gasoline Serv. sta.	Gasoline Inc. tax.	Kero. tank-wag.
Dallas, Tex.	14.0	18.0	5.0	8.0
Fort Worth	14.0	18.0	5.0	8.0
Houston	14.5	19.0	5.0	8.0
San Antonio	13.5	17.5	5.0	8.0

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank-wagon*
Oleum spirits	15.7
V.M.&P. naphtha	16.0
Cleaners' naphtha	15.0
Stanisol	15.0

*Prices include 3-cent Illinois tax, but not 1-cent federal tax or 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150-gallon lots if covered by contract.

Canada*

3-Star Imperial Gasoline
IMPERIAL OIL, LTD.

	Tank-wag.	Inc. tax	Kero. tank-wag.
Halifax, N. S.	24.5	10.0	18.5
St. John, N. B.	24.5	10.0	18.5
Montreal, Que.	21.0	6.0	17.5
Toronto, Ont.	22.0	6.0	17.0
Hamilton, Ont.	22.0	6.0	17.0
Winnipeg, Man.	27.5	7.0	20.7
Brandon, Man.	28.1	7.0	22.9
Regina, Sask.	26.0	7.0	22.0
Saskatoon, Sask.	28.3	7.0	24.9
Edmonton, Alta.	26.5	7.0	21.5
Calgary, Alta.	23.5	7.0	19.0
Vancouver, B. C.	23.0	7.0	23.0

*Imperial gallon used in Canada.

Divided dealers pay tank-wagon prices. Discount to undivided dealers, 1 cent below tank-wagon price. In maritime provinces both divided and undivided dealers pay tank-wagon price.

Tank-Wagon Changes

Standard Oil Co. (Nebraska) September 19 advanced dealer gasoline at Scottsbluff 3.6 cents.

Standard Oil Co. ((Indiana) September 19 reduced dealer gasoline at Quincy 1 cent.

Standard Oil Co. of Kentucky September 7 reduced dealer and tank-wagon gasoline 1 cent at Louisville; September 16 reduced dealer and tank-wagon gasoline 1 cent at Savannah; September 26 advanced dealer and tank-wagon gasoline 1.5 cents at Paducah.

Standard Oil Co. of Louisiana September 22 reduced tank-wagon kerosene at Nashville 2 cents.

Standard Oil Co. of Ohio September 26 reduced tank-wagon and dealer gasoline .5 cent throughout Ohio.

New York Market

(Continued from Page 119)

mand in the New York market. Space heaters are being used by many home owners who are reluctant to fire up their furnaces before average temperatures dip below their present level. Kerosene is selling in the New York tankcar market at 4⅝ to 4¾ cents, but most of the large suppliers are holding firm at the higher of the two figures.

Industrial fuel oil remains without feature. Barge deliveries of industrial fuel oil at 85 to 90 cents per barrel have been reported although large dealers are firm at 95 cents for marine bunkering purposes.

Prices of Refined Products

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of September 27, 1938

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents a gallon on lubricating oils.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
62 oct. and below	.04	.04⅛
63-66 octane	.04¼	.04½
67-69 octane	.04⅝	.04⅞
70-72 octane (regular)	.04⅞	.05⅛
60-62 400 grades:		
62 oct. and below	.04	.04⅛
63-66 octane	.04¼	.04½
67-69 octane	.04⅝	.04⅞
70-72 octane (regular)	.04⅞	.05⅛
64-66 375	.04⅝	.04⅝
68-70 360	.04⅞	.05

NORTH TEXAS—

U. S. Motor grades:		
62 octane and below	.04	.04⅛
63-66 octane	.04⅜	.04½
67-69 octane	.04⅝	.04¾
70-72 octane (regular)	.04⅞	.05⅛
60-62 400	.04	.04⅛
64-66 375	.04⅜	.04⅝

NORTH LOUISIANA (Ark. and N. La. delivery)—

U. S. Motor grades:		
62 octane and below	.04½	.04⅝
63-66 octane	.04⅝	.05
67-69 octane	.05	.05⅛
70-72 octane (regular)		.05½

ARKANSAS (Ark. and N. La. del.)—

U. S. Motor grades:		
62 octane and below	.04¾	.04⅞
67-69 octane	.05⅜	.05½

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
62 octane and below	.04⅛	.04⅜
63-66 octane	.04⅝	.04⅝
67-69 octane	.04¾	.05
70-72 octane	.05	.05¼
60-62 400 grades:		
62 octane and below	.04⅛	.04⅜
63-66 octane	.04⅝	.04⅝
67-69 octane	.04¾	.05
70-72 octane	.05	.05¼
64-66 375	.04½	.04¾
68-70 360	.05	.05⅛

PENNSYLVANIA (Inland refineries)—

58-60 U. S. Motor:		
Below 60 octane	.05	.05¼
65 octane	.06¾	.07
68-70 octane	.07	.07¼

CALIFORNIA (domestic movement)—

54-58 U. S. Motor	.06½	.08
58-60 400, 65 oct. and higher	.07½	.09

EAST COAST (domestic)—

U. S. Motor, 60-64.9 octane:		
New York (Bayonne)	.06	.06¼
Philadelphia	.06	.06¼
Boston	.06¼	.06½
Baltimore	.06	.06¼
Charleston, S. C.	.06¾	.07
U. S. Motor, 65 and above:		
*New York (Bayonne)	.06½	.06¾
Philadelphia	.06½	.06¾
Boston	.06½	.06¾
Baltimore	.06½	.06¾
Charleston, S. C.	.07	.07¼

*All grades of gasoline one-eighth to one-fourth cent less for barge shipments. New York Harbor prices are for New York and New England delivery. Prices for New Jersey delivery one-fourth cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
Below 60 octane		.04⅝
60-64.9		.04¾
65 octane and higher	.04⅞	.05⅛
68-70		.05¼

Naphtha

PENNSYLVANIA (Inland refineries)—

52-56 450 (blending)	.04¾	.04⅞

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70		.02¾
Grade 18-55	.03⅛	.03¼

NORTH TEXAS—

Grade 26-70		.02¾
Grade 18-55	.03⅛	.03¼

CALIFORNIA—

75-85 375-390	.06¼	.07

NORTH LOUISIANA (Ark. and N. La. delivery)—

Grade 26-70		.03⅛

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 i.b.p., 110-flash, 540-550 e.p.	.03⅞	.04
41-43 gr., 300-320 i.b.p., 110-125 flash, 500-520 e.p.	.04⅛	.04¼
46-48 gr., 210-230 i.b.p., 480 max., e.p.	.04½	.04⅝

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

41-43	.04	.04⅛
42-44	.04¼	.04⅜

NORTH TEXAS—

41-43	.04	.04⅛

NORTH LOUISIANA (Ark. and N. La. delivery)—

41-43	.04⅛	.04⅜

ARKANSAS (Ark. and N. La. del.)—

41-43	.04⅛	.04⅝

PENNSYLVANIA (Inland refineries)—

45	.04⅞	.05⅛
46	.05⅛	.05¼
47	.05¼	.05⅝

CHICAGO (Based on Group 3)—

41-43	.04	.04¼
42-44	.04¼	.04½

CALIFORNIA (Pac. Coast market)—

38-43 high burning test	.05	.06

NEW YORK (Bayonne, N. J.)—

41-43	.04⅝	.04¾

***GULF COAST (domestic)—**

41-43		.04

*Barge price one-eighth cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

Range oil	.03⅞	.04
No. 1 prime white, 38-42	.03¾	.03⅞
No. 1 straw, 38-40	.03⅝	.03⅞
No. 2 straw, 32-36	.03½	.03¾
No. 2 dark, 32-36	.03⅝	.03½
No. 3 zero to 15, 28-32	.03¼	.03⅝
No. 3, 15 and above, 28-32	.02⅞	.03

NORTH TEXAS—

No. 1 prime white, 38-42	.03¾	.03⅞
No. 1 straw, 38-40	.03⅝	.03⅞

NORTH LOUISIANA (Ark. and N. La. delivery)—

No. 2, 32-36	.03¼	.03½

ARKANSAS (Ark. and N. La. del.)—

No. 2, 32-36		.03⅝

CHICAGO (Based on Group 3)—

Range oil	.03⅞	.04⅛
No. 1 prime white, 38-40	.03¾	.04
No. 1 straw, 38-40	.03⅝	.03⅞
No. 2 straw, 32-36	.03½	.03¾
No. 2 dark, 32-36	.03¾	.03½
No. 3, zero to 15, 28-32	.03¼	.03⅝
No. 3, 15 and above, 28-32	.02⅞	.03

NEW YORK (Bayonne, N. J.)—

*No. 1	.04½	.04⅝
*No. 2		.04
*No. 4		.04

*Barge deliveries one-eighth to one-fourth cent under above tankcar price.

Gas Oil and Fuel Oil

(Gas oil per gal.; fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil	.02⅞	.03⅛
No. 4, low pourpoint, 24-28	1.00	1.10
No. 4, 15 and above, 24-28	.85	.90
No. 5, low pourpoint, 18-22	.70	.75
Below 18 fuel oil, industrial	.50	.60

NORTH TEXAS—

U.G.I. gas oil	.02⅞	.03⅛
No. 4, low pourpoint, 24-28	1.00	1.10
No. 5, low pourpoint, 18-22	.70	.75
Below 18 fuel oil, industrial	.50	.60

NORTH LOUISIANA (Ark. and N. La. delivery)—

10-14 fuel oil, industrial	.75	.82½

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.02⅞	.03
No. 4, low pourpoint, 24-28	1.00	1.10
No. 4, 15 and above, 24-28	.85	.95
No. 5, low pourpoint, 18-22	.70	.80
No. 5, 15 and above, 18-22	.60	.70
No. 6, low pourpoint, 10-16	.60	.70
No. 6, 15 and above, 10-16	.35	.45

PENNSYLVANIA (Inland refineries)—

36-40	.04	.04⅛

CALIFORNIA—

Los Angeles:		
30-40 gas oil, per bbl.	1.15	1.40
24 plus Diesel, per bbl.	1.05	1.40
24 plus Diesel (bunkers)	1.25	1.55
12-16 (bunkers at tidewater)	.80	.90
10-16 (cargo lots)	.65	.85
12-17 (tankcars)	.55	.90
10-17 (high sulfur)	.50	.85
San Joaquin Valley:		
10-18 (tankcars)	.60	.80
24 plus Diesel, per bbl.	1.20	1.50
San Francisco:		
24 plus Diesel, per bbl.	1.45	1.55
24 plus Diesel (bunkers)	1.50	1.55
10-16 (bunkers)	.90	.95

GULF COAST—

No. 2 fuel		.03½
43-47 Diesel		.03½
48-52 Diesel	.03½	.03⅝
53-57 Diesel	.03⅝	.03¾
Bunkers (bulk cargoes)	.60	.65
Bunker C (bunkers)		.75

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil		.04¼
28-30 Diesel (lighterage 6¼c per bbl.)		1.75
28-30 Diesel (tankcars)	.04¼	.04½
Bunker C (to ocean-going ships in N. Y. Harbor)		.95
Industrial fuel (tankcars)	.03¾	.04

Lighterage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

190-200 D, 15-25		.19
150-160 D, 0-10	.14¼	.16
150-160 D, 15-25	.13½	.15½
150-160 E, 15-25	.13	.15
100-110 D, 0-10		.14½
Steam refined:		
631 green (treated)		.12½
600 dark green (untreated)	.04½	.05

PENNSYLVANIA—

Bright stocks (Pennsylvania Grade No. 8 color, 140-150 at 210, 545-550 flash):		
10 pourpoint	.17	.17½
15 pourpoint	.16	.16½
20 pourpoint	.15	.15½
25 pourpoint	.14	.14½
Steam refined:		
600	.08	.08½
650	.10	.10½
600 Pennsylvania flash	.10½	.11
630 flash	.13½	.14
600 Warren E filtered	.12½	.13

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

150-3		.09
180-3		.10
180-4		.09½
200-3		.10½
200-4		.10
250-3		.11½
250-4		.11
280-3		.12½
280-4		.12
300-6½		.13
400-3½		.14
100-2½ paraffin oil 15-20 pourpoint:		.06
200-3		.10
200-4		.09½
250-3		.11
250-4		.10½
280-3		.12
280-4		.12½

GULF COAST—

Pale oils:		
200-3	.07	.07¼
300-3	.07½	.07⅝
500-3½	.08½	.08⅝
750-3½	.08⅝	.09¼
1,200-3½	.09½	.09⅝
1,500-4	.09⅝	.10
Red oils:		
200-5-6	.07¼	.07½
300-5-6	.07¼	.07½
500-5-6	.08	.08½
750	.08⅝	.09
1,200-5-6	.09¼	.09½

CALIFORNIA (moving to dom. market)—

Pale oils:		
100-2½-3	.07¼	.08
200-2½-3	.07¼	.08
300-2½-3	.07¼	.08
400-3-4	.07¼	.08
450-3-4	.07¼	.08
550-3-4	.09	.11
600-3-4	.09	.11
Red oils:		
200-4-5	.07¼	.08
300-5-6	.07¼	.08
350-5-6	.09¼	.11½
400-5-6	.09¼	.11½
450-5-6	.09¼	.11½
500-5-6	.09¼	.11½
600-5-6½	.09¼	.11½
700-6½ plus	.09¼	.11½
750-6½ plus	.09¼	.11½
900-6½ plus	.09¼	.11½

PENNSYLVANIA—

150 vis. at 70° color, 400-405 flash:		
Zero pourpoint	.17	.17½
10 pourpoint	.16	.16½
15 pourpoint	.15	.15½
25 pourpoint	.14	.14½
200 vis. at 70° F., 3 color:		
Zero pourpoint	.18	.18½
10 pourpoint	.17	.17½
15 pourpoint	.16	.16½
25 pourpoint	.15	.15½

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (a.m.p.) w.c. scale	.02¼	.02½

PENNSYLVANIA (Inland refineries)—

122-124 (a.m.p.) w.c. scale	.0235	.0245
124-126 (a.m.p.) w.c. scale	.0235	.0245

NEW YORK—

Wax in bags fully refined:		
122-125 (a.m.p.) wax		.0420
125-127 (a.m.p.) wax		.0435
128-130 (a.m.p.) wax		.0445
130-132 (a.m.p.) wax		.0455
133-135 (a.m.p.) wax		.0500
135-137 (a.m.p.) wax		.0515
124-126 (a.m.p.) w.s.		.0185
124-126 (a.m.p.) y.s.		.0185
Petrolatum in barrels, carload lots:		
Dark green	.02	.02¼
Amber	.02¾	.02½
Extra amber	.02¾	.02¾
Lily white	.05½	.05¼
Snow white	.06½	.06¼
Cream	.04½	.04¼

Export Prices

GASOLINE

GULF COAST—

U. S. Motor		.04⅝
60-62 400		.04⅝
61-63 390		.04¾
64-66 375	.04⅞	.05⅛

LOS ANGELES—

U. S. Motor grades:		
55-65 octane		.05
65-89 octane		.05¼
Above 89 octane		.05½

KEROSENE

GULF COAST—

41-43 prime white		.04
41-43 water white		.04

LOS ANGELES—

41-43 water white	.05	.05¼

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.o.s. in bbls.)—

Cylinder stocks:		
600 Warren E	.15	.15½
600 S.R. unfiltered	.16	.16½
630 S.R. unfiltered	.17	.17½
600 flash, S.R.	.17	.17½
630 flash, S.R.	.20½	.21
Bright stock:		
8 color	.16¼	.16½

NEUTRAL OIL

200-3 color	.21½	.22
150-3 color	.19½	.20

PARAFFIN WAX

NEW YORK (prices per pound)—

123-125 a.m.p.		.0375
125-127 a.m.p.		.0387
128-130 a.m.p.		.0412
133-135 a.m.p.		.0437
135-137 a.m.p.		.0455
Crude scale:		
124-126 w.s.	.0185	.0200
124-126 y.s.	.0185	.0200

Crude Oil Prices

Oklahoma, Kansas, North Central and East Central Texas

(Effective January 28, 1937)

East Texas (Aug. 29, 30 and Sept. 1, 1938)*	$1.25
Van. Tex.†	1.10
Camp Hill, Tex.	1.27
Cass County, Tex.‡	1.25
Talco	.73
Altus and Tipton, Okla.§	1.20
Other fields (see gravity table).	

*Price posted by all companies. †Humble Oil & Refining Co.; Pure Oil Co. ‡Texas Co. §Gulf Oil Co. Talco by Humble Oil & Refining Co.

North Louisiana and Arkansas

Smackover, all grades	$ .75
Schuler (Jones sand) (Sept. 17, 1938)	.85
Tullos and Urania	1.02
El Dorado East field	.90
Lisbon, La. (Sept. 19, 1938)	See note below

*Caddo Crude Oil Purchasing Co. Below 34°, 88 cents; 34°, 90 cents; 35°, 92 cents.

Gulf Coast

(Effective January 28, 1937)

Choctaw and Darrow, La. See note below.

Clay Creek, Tex.	$1.00
Garden Island, La.	1.37
Cleveland, Tex.	1.27
Hardin, Tex.	1.15
Lafitte, La.	1.24
Livingston, Tex.	1.27
Welsh, La.	.98
Tepetate (La.) (Jan. 28, 1937)	1.24

Duval, Jim Hogg, Webb and Zapata counties, Texas, and Heyser and Placedo fields take Mirando gravity prices. Jennings, La., 5 cents lower than Gulf Coast prices on each degree. Segno, Texas, takes Gulf Refining Co.'s Gulf Coast prices. Choctaw and Darrow, Louisiana, posted for first time by Standard Oil Co. of Louisiana, start below 21 degrees at 90 cents, with 3-cent differential up to 25 gravity, then 2-cent differential up to 40 and above, $1.36. Effective October 1, 1937, Stanolind Oil & Gas Co. in Evangeline, La., pays 92 cents for below 20 gravity, adding 2 cents for each degree upward to 40 and over, at $1.34.

Rocky Mountain States

(Effective January 28, 1937)

Iles, Colo., light*	$1.18
Iles, Colo., heavy*	1.12
Greybull, Wyo.*	1.30
Torchlight, Wyo.*	1.30
Grass Creek, Wyo., light (July 8, 1938)*†	1.05
Grass Creek, Wyo., heavy (May 1, 1938)*	.50
Hamilton Dome, Wyo. (May 1, 1938)*	.45
Elk Basin, Wyo., light (July 8, 1938)*†	1.05
Frannie, Wyo., heavy*	.62
Frannie, Wyo., light (May 1, 1938)*	.65
Hogback, N. M. (Jan. 28, 1937)*	1.33
Salt Creek, Dutton Creek and Midway, Wyo., take Stanolind's Oklahoma prices on a gravity basis.	
Big Muddy, Wyo.†‡	1.23
Rock Creek, Wyo.†	1.20½
Lea County, N. M. (see West Texas gravity table).	
Artesia, N. M. (Jan. 2, 1937)‡	.90
Maljamar, N. M. (Jan. 28, 1937)‡	.90
Canon City and Florence, Colo.	1.10
Lance Creek, Wyo.*	.97
Lander, Wyo. (Jan. 1, 1938)‡	.51¼
Sunburst, Mont. (Nov. 16, 1937)†	.90
Cat Creek, Mont. (Jan. 1, 1938)‡	.130
Garland, Wyo. (Jan. 1, 1937)†	.50

*Stanolind Oil & Gas Co. and Ohio Oil Co. †Ohio Oil Co. ‡Continental Oil Co., Texas Co. (April 1, 1938). §Hudson Oil Co.

Middle Western States

OHIO OIL CO.

(Effective January 28, 1937)

Lima	$1.00
Centralia, Ill. (Aug. 8, 1938)‡	1.10 to 1.25
Illinois (Sept. 27, 1938)	1.25
Princeton, Ind. (Sept. 27, 1938)	1.25
Midland, Mich. (Jan. 5, 1938)*	1.12
West Branch, Mich. (Aug. 9, 1938)†	.90
Buckeye (Jan. 8, 1938)	1.09½
Arenac, Mich. (Dec. 29, 1937)†	.80
Freeman-Redding (Mich.)	1.09½
Muskegon, Mich.	1.00
Eastern Kentucky:	
Big Sandy River (July 1, 1938)	1.32
Kentucky River (July 1, 1938)	1.40
Western Kentucky (Sept. 27, 1938)	1.20

*Posted by Pure Oil Co. †McClanahan P. L. and Simrall. ‡Posted by Owensboro Oil Corp. (Standard of Ohio).

Midland, Mich., price posted by Simrall Corp. and Pure Oil Co. includes Greendale, Porter, Beaverton, Crystal, and equal grades. West Branch and Arenac by Simrall Corp. Eastern Kentucky crude purchased by Ashland Refining Co., Ashland, Ky. Buckeye posted by Simrall Corp. and Pure Oil Co.

Eastern States

TIDE WATER ASSOCIATED OIL CO. and NEW YORK TRANSIT CO.

(Effective September 1, 1938)

Bradford, Pa.	$1.68
Allegany, N. Y.	1.68

SOUTH PENN OIL CO.

(Effective September 1, 1938)

Pennsylvania Grade Oil in National Transit Lines (Bradford field)	$1.68
Pennsylvania Grade Oil in Southwest Pennsylvania Lines	1.34
Pennsylvania Grade Oil in Eureka Pipe Line lines	1.28
Pennsylvania Grade Oil in Buckeye Pipe Line lines	1.18
Corning Grade Oil in Buckeye Pipe Line Co. line (Sept. 3, 1938)	1.07

PENNZOIL CO.

(Effective September 1, 1938)

Pennsylvania Grade Oil in National Transit Lines:	
Group A	$1.61
Includes Cochran, Franklin, Hamilton and Doolittle district.	
Group B	1.60
Includes Tidioute district.	
Group C	1.59
Includes Turkey and Tidioute districts.	
Group D	1.58
Includes Bear Creek and Porkey districts.	
Group E	1.56
Includes Eldeneau, Bull Creek, Rough Run, Carbon, Dipner, Bredlin, McJunkin, Jameson, Kenerdell, Emlenton, Tiona, Lacey and Kinzua districts.	

PURE OIL CO.

(Effective Sept. 1, 1938)

Cabin Creek, W. Va.	$1.28
Bradford Hollow, W. Va.	1.28
Kelly Creek, W. Va.	1.28

Southwest Texas

(Effective January 28, 1937)

Pettus	$1.37
Salt Flat, Darst Creek, Hilbig, Carroll, Clark, Zoboroski	1.09
Lytton Springs	1.12
Luling	1.00

Saxet and Taft take same gravity table as Gulf Coast.

West Texas

See gravity table.

Pecos County*	$ .91
Pecos shallow†	.81

*Shell Petroleum Corp., Gulf Pipe Line Co. and Humble Oil & Refining Co. †Shell Petroleum Corp.

Canada

Ontario (Sept. 9, 1933)*

Petrolia	$2.10
Oil Springs	2.17

TURNER VALLEY NAPHTHAS AND CRUDE OIL

(January 5, 1938, by Imperial Oil, Ltd.)

Clear naphtha and discolored naphtha, 65 gravity and higher	$2.14
Discolored naphtha and crude oil, 40-40.9 gravity	1.14
Increasing 2 cents for each degree gravity with top price for 64-64.9 gravity	1.62

These prices f.o.b. producers field tankage.

*Imperial Oil, Ltd.

Crude Oil Price Changes

Superior Oil Co. of California's recent 10-cent reduction in the Evangeline field in Acadia Parish, Louisiana, was occasioned by the cut in the price of oil in East Texas on which price Superior's sales contracts and royalties are based. The company is not an open market buyer of crude in Evangeline. Superior sells its own production and acts as agent in marketing the oil of some other producers.

Effective September 17, Phillips Petroleum Co. posted 85 cents per barrel for Jones sand oil in the Schuler, Ark., field and 75 cents per barrel for Smackover heavy oil.

Fordsville Gathering System (Standard Oil Co. of Ohio) reduced the price it pays for crude oil in the Birk City, Kentucky, pool 5 cents per barrel, effective September 27. The new price is $1.20 per barrel. At the same time it reduced other western Kentucky crude 10 cents per barrel, or to $1.20.

Owensboro Corp. (Standard Oil Co. of Ohio), effective September 27, reduced its crude prices in Illinois outside of the Centralia field 10 cents per barrel, or to $1.25 per barrel. It had already been paying $1.25 for oil in some parts of the Centralia field, and $1.10 per barrel in the more congested parts of that field. Effective September 27, Ohio Oil Co. posted Illinois (Eastern and Central) at $1.25; Princeton, Ind., at $1.25 and Western Kentucky $1.20.

Texas Wildcats

(Continued from Page 114)

191, Lemuel Andrews Sur. U.R. 1,750 ft.

Dunigan Bros. and Fred Hyer No. 1 Gaither, 4½ mi. N of Anson, sec. 38, B.B.B.&C. Sur. Drlg. 4,178 ft.

R. B. Farris No. 1 Chas. Donohoo, 220 ft. from S and E lines, N½ Sec. 5, B.B.B. &C. Sur. S.D. 2,090 ft.

S. C. Herring No. 1 B. L. Ellis, 330 ft. fr. N and E lines, SE¼ Sec. 8-15, T.&P. Sur. Loc.

Humble O. & R. Co. No. 1 Huddleston, Sec. 49, Blk. 18, T.&P. Sur. Flwd. 20 B.O. 20 min.; T.S. 2,912 ft.

King et al No. 1 Stover, D. H. Stover Sur. No. 7. Drlg. 1,790 ft.

C. B. Lynn No. 1 C. P. Poe, L. Katz Lee Sur. No. 335. T.D. 3,280 ft.; W. O.C. 2,777 ft.

Montray & King No. 2 G. Martinez, Martinez Sur. No. 195. D.&A. 2,465 ft.

Pet. Producers No. 1 McDuff, Sec. 82, Blk. 15, T.&P. Sur. Comp.; 291 B.O. P.D.

S. B. Roberts Co. No. 1 Roy E. Prichard, 205 ft. fr. S L, 2,428 fr. E L, J. E. Cockrell subd. 2, G. Martinez Sur. 195, Loc.

Sinclair Prairie No. 1 Williams, Sec. 40, Blk. 18, T.&P. Sur. Drlg. 2,310 ft.

Stiles et al No. 1 Cook, Sec. 89, B.B.B. &C. Sur., western part of county. Drlg. 2,000 ft.

Nolan County

Oyster, Harkrider et al No. 1 J. H. Withers, C SW¼ Sec. 65-21, T.&P. Sur. Wildcat to drill 4,000 ft. S.D. 4,505 ft.

Chas. E. Peddicord No. 1 Tipton, Sec. 43, Blk. 19, T.&P. Sur. Drlg. 673 ft.

Union Oil Co. No. 1 J. D. Pepper, Sec. 51, Blk. 21, T.&P. Sur.; 5,000-ft. test, 6 mi. SW of Sweetwater. S.D. 615 ft.

Palo Pinto County

Goble-More Drlg. Co. No. 1 M. B. Costello, R. R. Williams Sur., Abst. 896. Drlg. 1,505 ft.

Shackelford County

Jee DeGrazier No. 1 Harbough, E cen. part of county, Sec. 1563, T.E.&L. Sur. 4,500-ft. test. U.R. 3,188 ft.; O.&G. at 3,612-31 ft.

Fox & Rudd No. 1 Shotwell, Sec. 59, B. A.L. Sur. W.O.C. 1,542 ft., P.B. depth.

R. H. Gordon & Frank Pethybridge No. 1 C. B. Snyder, 330 ft. fr. N and E lines, Sec. 38, L.A.L. Sur.; 4,500-ft. test. S.D.O. 3,620 ft.

J. G. Hammond No. 1 Coker, 1,620 ft. fr. S line and 1,020 ft. fr. W lines, Sec. 159, B.B.B.&C. Sur. Drlg. 4,414 ft.

Stephens County

Lone Star No. 1 J. S. McKee, 660 ft. fr. N line, 660 ft. fr. W line, Sec. 41-7, T.&P. Sur. Trying to S.O. wtr. 3,618 ft.

Taylor County

Charter O. & G. Co. and A. R. Forester No. 2 Frederickson, Guadalupe C.S.L. Sur., Sec. 120, 3 mi. N of View. Drlg. 1,880 ft.

T. M. Knoles No. 1 Bowles, Sec. 21, B. A.L. Sur. Drlg. 1,830 ft.

Throckmorton County

Beacon O. & R. Co. No. 1 Hawes Est., Sec. 979, T.E.&L. Sur. Est. 100 bbls. wtr with S.O.; S.D. 4,070 ft.; T.D.

Jones & Stasney No. 1 C. T. Brockman, 330 ft. S line, 330 ft. E line, Sec. 95, Comanche Indian Sur. T.D. 4,706½ ft., est. 1,000 to 1,500 B.O.P.D.; acd. 4,711 ft.; ga. 145 B.O. 2 hrs.; trying to S.O. wtr.; S.D.; no test; T.D. 4,716 ft.

Marland-Drake No. 1 Dickie Bros., center T.E.&L. Sur. 2226. S.D. 4,085 ft.

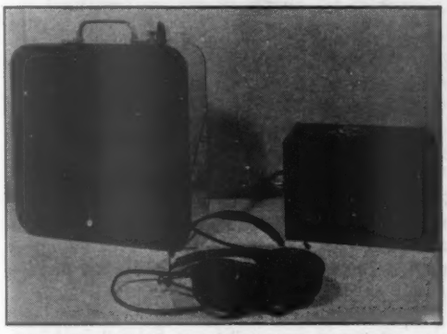
Crude Prices by Gravities

	Oklahoma-Kansas	Oklahoma-Kansas	North and Central Texas	East Central Texas (Mexia district)	North Louisiana-Arkansas	Gray County, Texas	Hutchinson-Carson counties, Texas	Rodessa, Louisiana-Texas and Panola County, Texas	Conroe, Tomball, Raccoon Bend, (Deep) Satsuma	Gulf Coast	Gulf Coast	Lea County, N. Mex. West Texas except Pecos County	Mirando district, Texas	Marion County, Texas	Refugio, Greta, Saxet, Taft, Texas	Anahuac, Flour Bluff, Dickson, Turtle Bay	White Castle, Louisiana	Iowa, Louisiana	Cayuga, Texas
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Bel. 18	....	....	....	....	....	....	....	....	....	$.95	....	....	....	....	....	....	....	$.90	....
18-18.9	....	....	....	....	....	....	....	....	....	95	....	....	....	....	....	....	....	92	....
19-19.9	....	....	....	....	....	....	....	....	....	95	....	....	....	....	....	....	$.94	94	....
20-20.9	....	....	....	....	....	....	....	....	....	95	$.95	....	$.96	....	$1.01	....	96	96	....
21-21.9	....	....	....	....	....	....	....	....	....	98	98	....	98	....	1.03	....	98	98	....
22-22.9	....	....	....	....	....	....	....	....	....	1.01	1.01	....	1.00	....	1.05	....	1.01	1.01	....
23-23.9	....	....	....	....	....	....	....	....	....	1.04	1.04	....	1.02	....	1.07	....	1.04	1.04	....
24-24.9	....	....	....	....	....	....	....	....	....	1.07	1.07	....	1.04	....	1.09	....	1.07	1.07	....
Bel. 25	....	$ 98	....	....	$.90	....	....	$.93	....	....	....	....	....	$.90	....	....	....	....	$.88
25-25.9	....	1 00	....	....	.92	....	....	.95	....	1 10	1 10	$.78	1.06	.92	1.11	....	1.10	1.10	.90
26-26.9	....	1.02	....	....	.94	....	....	.97	....	1 13	1.13	.80	1.08	.94	1.13	....	1.13	1.13	.92
27-27.9	....	1 04	....	....	.96	....	....	.99	....	1.15	1.15	.82	1.10	.96	1.15	....	1.15	1.15	.94
28-28.9	....	1.06	....	....	.98	....	....	1.01	....	1.17	1.17	.84	1.12	.98	1.17	....	1.17	1.17	.96
Bel.29	$1 06	....	$.96	$1.03	....	....	....	....	$1.20	....	....	....	....	....	....	....	....	....	....
29-29.9	1.08	1.08	.98	1.05	1.00	....	....	1.03	1.22	1.19	1.19	.86	1.14	1.00	1.19	....	1.19	1.19	.98
30-30.9	1 10	1 10	1.00	1 07	1.02	....	....	1.05	1.24	1.21	1.21	.88	1.16	1.02	1.21	$1.16	1.21	1.21	1.00
31-31.9	1.12	1.12	1.02	1.09	1.04	....	....	1.07	1.26	1.23	1.23	.90	1.18	1.04	1.23	1.18	1.23	1.23	1.02
32-32.9	1.14	1.14	1.04	1.11	1.06	....	....	1.09	1.28	1.25	1.25	.92	1.20	1.06	1.25	1.20	1.25	1.25	1.04
33-33.9	1.16	1.16	1.06	1.13	1.08	....	....	1.11	1.30	1.27	1.27	.94	1.22	1.08	1.27	1.22	1.27	1.27	1.06
34-34.9	1.18	1.18	1.08	1.15	1.10	....	....	1.13	1.32	1.29	1.29	.96	1.24	1.10	1.29	1.24	1.29	1.29	1.08
Bel. 35	....	....	....	....	....	0.96	$.91	....	....	....	....	....	....	....	....	....	....	....	....
35-35.9	1.20	1.20	1.10	1.17	1.12	.98	.93	1.15	1.34	....	1.31	.98	1.26	1.12	1.31	1.26	1.29	1.29	....
36-36.9	1 22	1.22	1.12	1.19	1.14	1.00	.95	1.17	1.36	....	1.33	1.00	1.28	1.14	1.33	1.28	1.29	1.29	....
37-37.9	1.24	1.24	1.14	1.21	1.16	1.02	.97	1.19	1.38	....	1.35	1.02	1.30	1.16	1.35	1.30	1.29	1.29	....
38-38.9	1.26	1.26	1.16	1.23	1.18	1.04	.99	1.21	1.40	....	1.37	1.04	1.32	1.18	1.37	1.32	1.29	1.29	....
39-39.9	1.28	1.28	1.18	1.25	1.20	1.06	1.01	1.23	1.42	....	1.39	1.06	1.34	1.20	1.39	1.34	1.29	1.29	....
40,over	1 30	1.30	1.20	1.27	1.22	1.08	1.03	1.25	1.44	....	1.41	1.08	1.36	1.22	1.41	1.36	1.29	1.29	....

New or Improved Equipment

New Pipe-Line Radio Detector Offers Increased Sensitivity

Engineering Laboratories, Inc., Tulsa, announces a new, sensitive and more accurate pipe-line radio detector, more rigidly constructed and



stronger. This detector has been designed especially to follow a single designated pipe line across country without interference or confusion from other lines lying close to or crossing the following line, and to determine the depth of the following line.

The detector consists of a receiver weighing 9 pounds and containing its own batteries. The headphone cord plugs into a phone-jack on the top in such a manner that the plug must be held in by a slight thumb pressure while listening, yet avoids unnecessary battery drain. Tubes, phones, and electrical parts are of standard radio type.

The transmitter weighs 10 pounds. It consists of a signal generator, batteries, and compartment for carrying the ground lead. It is connected to the pipe line by means of ground spears furnished and it supplies the signal that is heard in the dectector receiver in following out the line.

The equipment is equally efficient in high-conductivity soil, such as salt marsh, or soil of low conductivity, as dry sand. The device provides extreme sensitivity and absolute selectivity, according to the manufacturers, accurate line locations within 2 inches being possible. Depth determinations can be made within 10 per cent of true depth. Due to simplicity of operation, previous experience or special skill is unnecessary in the successful operation of this pipe-line detector.

Engineering Laboratories, Inc., is the manufacturing affiliate of the Seismograph Service Corp., designing and manufacturing all types of special, scientific, electrical, and seismic equipment.

Bulletins, Booklets and Other Literature for the Trade

The September issue of the News Letter, published by the pump division of Byron Jackson Co., Los Angeles, Calif., contains the article on the submersible deepwell pump which D. W. Conkling delivered last April before the national convention of the American Water Works Association.

Miller Sand Pump Co., Oklahoma City, Okla., has issued a new price-list.

The Continental Supply Co., Dallas, Tex., announces publication of two bulletins concerning geared pumping units. These are the 10GS-7½MDO geared pumping unit for light wells and the JS series of single-crank geared pumping units, especially applicable for multiple well hookups.

International trucks licking tough conditions in the oil fields are shown in the current number of International Power, published by International Harvester Organization, 180 North Michigan Avenue, Chicago.

Capacities, specifications and mechanical features of the largest "Caterpillar" Diesel tractor have been grouped in a booklet, Form 4876, just issued by Caterpillar Tractor Co., Peoria, Ill. The booklet is printed in two colors and profusely illustrated.

How high-strength castings aid rotary engine performance is told in an article in the current number of Nickel Cast Iron News, published by International Nickel Co., 67 Wall Street, New York.

The new gumbo buster reserve clutch receives particular attention in the latest issue of the Bridgeport Bulletin, published by Bridgeport Machine Co., Wichita, Kans.

Sullivan Machinery Co., Michigan City, Ind., has released a 20-page catalog describing and illustrating the Unitair stationary and semiportable air compressors.

Perco Names Licensing Agent

Perco, Inc., of Bartlesville, Okla., has appointed Process Management Co., Inc., 120 East Forty-first Street, New York, as licensing agent for the Perco copper sweetening process in the territory east of the Mississippi. Perco copper sweetening has been adopted extensively in the Middle West, where some 70 installations operate on a wide range of stocks, including natural, straightrun, cracked, vapor-recovery and polymer gasolines, and are said to be showing substantial savings in the way of lower operating costs, improvement of quality and elimination of losses.

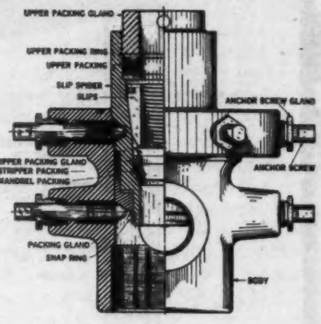
Allis-Chalmers in New Home

The Dallas, Tex., district office of Allis-Chalmers Manufacturing Co., of which E. W. Burbank

is manager, has been moved to a new location, 1800 North Market Street, where the power, electrical and industrial divisions of the company now occupy an entire building. This three-story building houses not only the company's offices, but also its warehouse, which carries a large stock of Texrope belts and sheaves, transformers, motors, starters and pumps. It has a small machine shop, where minor repairs may be made. The company's tractor and farm implement division maintains its separate sales and service branch in Dallas.

Tubing-Heads Made Especially For Wells Under Pressure

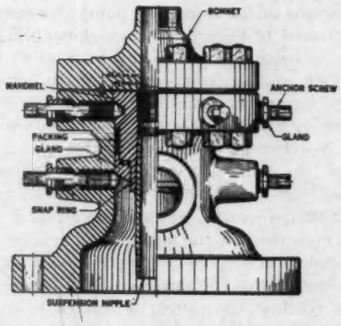
National Type GH tubing-heads, described in a late bulletin of the National Supply Co., Toledo, Ohio, are designed for use on wells drilled under



GH-3D TUBING HEAD

pressure or expected to flow for a long time. With this type of head the operations, which necessitate the raising and lowering of tubing, can be performed under pressure, making the killing of flowing wells unnecessary.

The stripper or pressure drilling equipment is flanged to the upper end of the tubing-head when drilling or manipulating tubing. When the tubing has been run the stripper attachment is removed



GH-4 TUBING HEAD

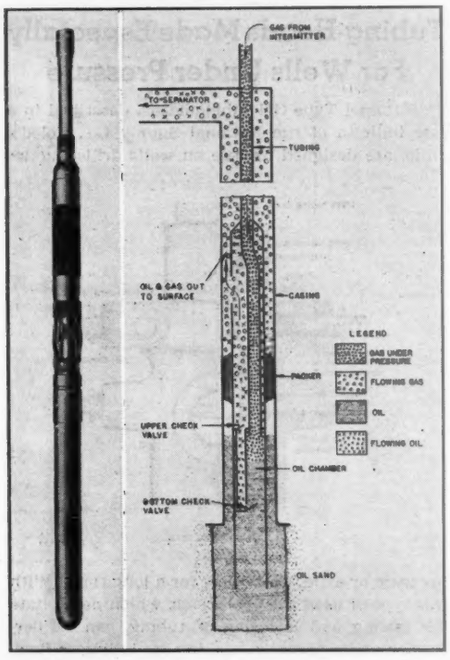
from the well and the christmas tree installed. One set of stripper equipment can be used to service a number of wells. It is unnecessary to have a master valve on the well. When running tubing, a tubing-spear or closing tool is used to plug the inside of the tubing.

The tubing-hanger is held in place by anchor screws which effect a seal independent of the weight of the tubing. A reinforced ring of Neoprene is compressed in the direction of pressure by the two lower screws and makes a positive seal between the body and the hanger. Neoprene packing is not decomposed by oil and will last indefinitely.

The Type GH-3 has threaded connections and outlets. The Types GH-4 (illustrated) and GH-5 are identical with the GH-3 except that both are flanged on the lower end. In addition the GH-5 has flanged outlets. When a slip-hanger is used in the bodies of Types GH-3, GH-4, and GH-5, these are known as GH-3D, GH-4D, and GH-5D respectively. As shown in the illustration of Type GH-3D, the packing is both above and below the slips. Tubing packers can be set when this slip-hanger is used.

Philpneumatic Pump Made for Gas-Lift Pumping of Wells

The Philpneumatic pump for gas-lift pumping of wells, introduced by Fisher Governor Co., Marshalltown, Iowa, operates on the principle of ap-



No. 1 *No. 2*

plying gas pressure to the top of a trapped quantity of liquid within the pump, raising the liquid to the surface and doing so with low gas-fluid ratio.

Figure 1 shows the general appearance and construction of the assembled pump. Its operation is illustrated in Figure 2, which shows the pump set in the bottom of the casing with an oil chamber which can be extended any length below the packer. The upper standing or check and bottom standing or check valves are illustrated schematically. The general flow of oil from the oil sand through the bottom standing valve into the oil chamber can be seen.

The Philpneumatic pump is run at the end of a string of tubing in the usual manner and is set in the hole at a depth below the normal fluid level in the well. After the predetermined point of setting is reached, the tubing is rotated to the left which, in a half turn of the packer, will unlatch the packer slips to engage the casing, and with weight of tubing string, expands the packer rubber against the inner wall of the casing, forming a tight seal.

Oil is taken out of the hole only when and if it has accumulated, this being accomplished by proper setting of intermitter at the surface.

Here and There With Men Who Manufacture Equipment

McGill Manufacturing Co., Bearing Division, Valparaiso, Ind., has entered the Mid-Continent field with the opening of an office at 909 Tulsa Loan Building, Tulsa, in charge of Tom W. Crosby. Mr. Crosby, formerly with Wheatley Brothers Pump & Valve Manufacturers, will have Kansas, Oklahoma, and Texas as his territory.

C. S. Quillen, Ch. E., has been placed in charge of field engineering for the Mixing Equipment Co., Rochester, N. Y., in the city of New York and in central southern territories. A graduate of Drexel Institute, Mr. Quillen was formerly with Alco Products and Carbide & Carbon Chemical Corp. His headquarters will be at 377 Broadway, the New York office of Mixing Equipment Co.

J. W. Meriam, for the past 24 years vice president and secretary of the Lincoln Electric Co., Cleveland, Ohio, has retired at the age of 60, closing a business career which spans the development of the arc welding industry.

J. F. Mitchell-Roberts, export manager in the New York office of Oliver United Filters, Inc., was to arrive in India the latter part of September for an extended stay. His headquarters will be at the Taj Mahal Hotel, Bombay.

The Pittsburgh Screw & Bolt Corp., Pittsburgh, Pa., has appointed John Pearce, formerly sales and service engineer with the National Acme Co., as a member of the sales and service department of its Colona division.

Louis O. Macloon, 1375 East Compton Boulevard, Compton, Calif., has been appointed general agent for Major rotary mud, an original Cuyama Valley product which is ground by the Brown Materials Co., Ltd., Huron, Calif.

Directs Gulf Coast Sales

Frank R. Coggeshall, for 23 years connected with some branch of the steel business, except for time out to serve in the World War, has taken over the Gulf Coast division of sales for Allied Steel Products Corp., Tulsa. Mr. Coggeshall—"Coggie" to his friends—has always been in the sales engineering department, even though he supervised the designing and construction of various car shops and plants for the manufacture of oil-country products in Oklahoma, Texas, and Kansas. In his new post Mr. Coggeshall will have offices in the Second National Bank Building, Houston, Tex.

Pittsburgh Equitable Fellowship

Dr. E. R. Weidlein, director of Mellon Institute, Pittsburgh, Pa., has announced an industrial fellowship on meter technology established by the Pittsburgh Equitable Meter Co. Among the first projects to be investigated are the adaptation of synthetic plastics as constructional material for liquid meters and the development of a satisfactory substitute for the present leather diaphragms in gas meters. Dr. R. L. Wakeman, incumbent of this fellowship, was trained at Massachusetts Institute of Technology, from which he received the degree of Ph.D. in 1930.

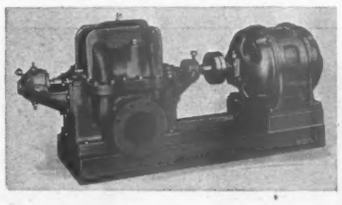
Protection, Comfort in Eyeshield

The Jackson Type C eyeshield consists of a flexible, transparent, noninflammable visor obtainable in clear, smoked, light-green, dark-green or amber shades, adjustably hinged to a light headgear. No part of it rests on the nose or ears, making it comfortable to wear. It does not interfere with the mechanic's eyeglasses, if he wears them. Ample ventilation eliminates fogging. Protection is afforded from the front and from both sides by the transparent visor, which is economically replaced if ever necessary. Hot metal rolls off this visor without marking it. The headband is equipped with removable sweatband. This shield, introduced by Jackson Electrode Holder Co., Detroit, Mich., provides protection for workmen engaged in soldering, flash, gun and spot-welding operations and many other cases where eyes should be protected from flying particles.

Hotwell and Condensate Pump Is Offered by Worthington

Worthington Pump & Machinery Corp., Harrison, N. J., has developed an improved two-stage centrifugal hotwell and condensate pump. Featuring oversized suction openings, pick-up type impellers, and generous vents, the new line of pumps if offered for efficient removal of condensate under high vacuum, with minimum available submergence.

The casing of the new pump is of cast iron, horizontally split for ready access and removal



of the rotor. Suction and discharge nozzles are located in the lower half of the casing, while an interstage passage is cast integral with the upper half of the casing. A liberal-sized vent permits escape of entrained vapor.

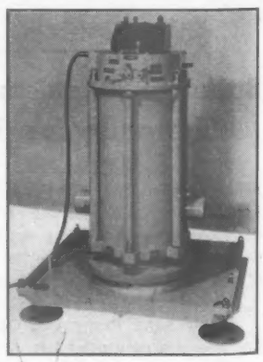
Bronze impellers, of the single-suction enclosed type, designed especially for hotwell and condensate service, are mounted on the shaft with the suction openings facing inward. The back, or discharge, sides of the impellers are thus adjacent to the stuffing-boxes, so that the latter are under first- and second-stage discharge pressures respectively, effectively preventing leakage of air into the pump. Details of construction, dimension tables, and an interesting sectional view of this improved product are contained in the Worthington Bulletin W-318-B15.

Union Wire Rope Opens Branch

Union Wire Rope Corp., Kansas City, Mo., has opened a branch in Houston, Tex. The warehouse, at 5805 Navigation Boulevard, in Houston, is being stocked with a complete line of wire ropes for all purposes, and will serve distributors and customers in the Gulf Coast area of Texas, Louisiana, Mississippi and Alabama, as well as those in Mexico and South America. H. E. Frye has been appointed Gulf Coast manager and has been transferred from Portland, Ore., to Houston. The distributor of Union wire lines in the Houston area is Plowden Supply Co., 2300 Navigation Boulevard.

New Gravitymeter Developed by American Askania Corp.

American Askania Corp., 826 M. & M. Building, Houston, Tex., announces that a new gravitymeter of the mechanical-electrical type will be put on the market soon. It has the following characteristics:



The weight of the instrument is about 125 pounds, conveniently carried in half-ton delivery truck where readings can be taken under almost any weather conditions. Time necessary to complete one station from the time the truck stops until it starts again is about five minutes. Number of stations per day is about 20, depending upon road

conditions and distance between stations. Probable error of the instrument is given as plus or minus .1 mgl. Measuring range about 1,600 mgl. Electrical temperature control is provided.

The tilt error of the gravitymeter is reported as being very small, so that troublesome level errors will not have a material effect on the results. Several hundred field stations have already been covered with this new-type gravitymeter. The instrument, according to the manufacturers, will stand comparatively rough treatment. American Askania Corp. advises that equipment of this type is expected to be ready for delivery late this fall.

Norris Opens Store in St. Elmo

W. C. Norris, manufacturer, Tulsa, has opened a branch store in St. Elmo, Ill., where the company's line of oil-well pumping supplies will be kept. Russell Smith, former resident salesman in Kansas, is manager. Jack Whitten, with several years' experience in the Tulsa plant, is being transferred to the Illinois territory along with H. J. Osborne, Jr., formerly of the Odessa, Tex., branch.

Northill Appoints Distributors

The Northill Co., Inc., Los Angeles, Calif., is appointing distributors and dealers for Covic Diesel power packs in every part of the United States. The company recently opened mass production of Covic Diesels in Los Angeles, under direct license from the parent British company. With distribution arranged in Pacific Coast and inter-mountain states, a series of demonstration meetings throughout the Middle West and East has been opened by Ed Zuchelli, sales director for Northill. Within the next 60 days distribution will be completed in the major industrial and marine engine markets. Eight power packs are shown in the Covic line. The basic Covic engine is an opposed two-cylinder, four-cycle full Diesel with a weight, including flywheel, of approximately 320 pounds.

BAKER LAUNCHES "OIL-TOOL EDUCATION ON WHEELS"

"An oil-tool education on wheels" describes the new demonstration trailer designed by Baker Oil Tools, Inc., to be used as a traveling exhibit of practically the company's entire line of speciality oil tools, with particular emphasis on the new Baker cement wash-down whirler float-shoe and guide-shoe.

The trailer was built to conform to the design and specifications of Baker engineers. It has an overall length of 18 feet and when ready for the road weighs approximately 4,620 pounds, being about three times heavier than the usual house trailer of the same size. This rolling exhibit is pulled by a Ford V-8 coupe and cruises along easily at 40 miles an hour. Both car and trailer are finished in the yellow and blue which long have identified the Baker organization and Baker products.

On display in the trailer are scale models of virtually the entire line of Baker oil tools. In the demonstration of the wash-down whirler float-shoe and guide-shoe the wash-down and up-whirler action is clearly illustrated through the use of a glass-walled unit that shows exactly what happens down in the hole during landing and cementing operations. Other items include cutaway models of Baker guiding, floating and cementing equipment; metal "petal" cementing basket; cement-retainer; rotary wall-scraper and wall-sampler; cable-tool core-barrel; and the Model B Bakwik drillpipe float.

A disappearing silver screen and a 16 m.m. projector are to be used in showing motion pictures illustrating the design, construction, operation and practical field use of Baker products.

Interior equipment of the trailer includes a heavy-duty electric light plant providing current for operation of the wash-down whirler demonstration unit as well as for lighting and heating.

In advance of the trailer's visit, an announcement of the time and date of its arrival will be posted in leading oil well supply stores along the route, covering more than half of the 48 states.

The Oil Industry Committee of the Tulsa Chamber of Commerce opened its fall campaign by visiting the new office building of The Oil and Gas Journal, where its members saw the plant in full operation, printing, binding and mailing the Annual Pipe Line Issue. After the visit the committee held a meeting at which it transacted business.

Shown in the picture, left to right, are: H. M. Cosgrove, Purchasing Agents Association; Marvin Hurley, Tulsa Chamber of Commerce; E. Klappenbach; Henry Hellinghausen, purchasing agent Oklahoma Pipe Line Co.; M. F. Bridges, purchasing agent Tide Water Oil Co.; W. R. Brown, purchasing agent Ohio Oil Co.; O. E. McClatchey, purchasing agent Barnsdall Oil Co.; H. A. Wilson, purchasing agent Bethlehem Supply Corp.; John Rogers, president Tulsa Chamber of Commerce; W. L. James, chairman of the committee and purchasing agent of Stanolind Oil & Gas Co.; Russell Cantwell, Tulsa Chamber of Commerce; Russell Rhodes, general manager Tulsa Chamber of Commerce; H. F. Stover, vice chairman of the committee and purchasing agent of Gaso Pump & Burner Manufacturing Co.; R. D. Robey, Jr., Robey Drilling Co.; V. C. Fuller, purchasing agent Gulf Oil Corp.; H. R. Powers, Bethlehem Supply Corp.; Kenneth Langley; R. P. Clark, Norvell-Wilder Supply Co.; P. C. Lauinger; D. L. Trax, engineer Gulf Oil Corp.

Not shown in the picture but attending the meeting were: W. H. Bratches, purchasing agent Shell Petroleum Corp.; F. W. Robertson, purchasing agent Skelly Oil Co.; Mark L. Terry, engineer Texas Co.; C. A. Prichard, purchasing agent Mid-Continent Petroleum Corp.; C. D. Watson, vice president Carter Oil Co.; C. O. Willson; S. H. Rourke; Glenver McConnell, mechanical engineer Shell Petroleum Corp.

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El Dorado, Union County, Arkansas, Magnolia, Columbia County, Arkansas. Fee, Lease and Mineral ownership on short notice. Ownership maps.

LEASES—East Texas, La., South Ark. 20 acres up, dollar acre up. Owners—Address Attorney, Box 1122, Little Rock, Ark.

WHY PAY big prices for Oil Leases when potential land in fee, all royalty, can be bought for $5. Investigate. J. N. SWANSON, Sayre, Oklahoma.

DRILLING deals wanted 50,000 acres Southern Illinois in and around production area. Elmer Gant, Anna, Illinois.

BUY UNDER DRILLING WELL ON SABINE UPLIFT

Will sell small part of our leases in 10, 20, and 40 acre tracts to help meet expenses of drilling well which is now down 500 feet, on south flank of Sabine Uplift, Louisiana.

Also have limited number of producing royalties in Duval County, Texas.

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FOR SALE—Blocks of 100 to 10,000 acres 5 to 10 year term oil and gas leases located on structures near oil and pas producing wells. Two structures are geologically approved. Depth of drilling 450 to 800 feet. W. P. Harley, Bowling Green, Kentucky.

ILLINOIS 60,000 acres in and near production. Illinois Minerals Company, Cairo, Illinois.

HAVE large block leases on approved structure close to producers, shallow drilling, accessible. Willing to make good terms to have this drilled.
F. M. SHIDELER, Mancos, Colorado.

NOTICE

500 acres, 5 yr. leases—Northern Clay County, Illinois—5-N, 5-E. Will turn this for small bonus and a drilling contract. Leo H. Graves, Farina, Illinois.

WILL sell 1000 acres offsetting lime well with 38 feet sand at 1087 feet, for $1.50 per acre. Good geology. Particulars Box 10, Kincaid, Kansas.

NEW OIL FIELD at Ojo, Huerfano County, Colo. opens with gusher at 420 feet, with 48 gravity oil and heavy wet gas. Deeper production seems assured. Our test wells drilling. We own 30,000 acres covering both Ojo and Alamo structures. Will sell leases or royalties, small or large blocks. Drilling development wanted, no proration, high grade oil, railroad and highway service into the fields. S. W. Pressey, Box 614, Pueblo, Colo.

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N E KANSAS shallow gas acreage. Lease furnished and well drilled bottom hole money. Box 435, Lawrence, Kansas.

FOR SALE—75% interest in 840 acres semi-proven Oil and Gas leases near Celina, Tenn. Within one mile of proven acreage. Drilling rates reasonable. Frank H. Blum, Agent, 1205 Union Trust Bldg., Cincinnati, Ohio.

MY AUG.-SEPT. offers of 80 a. gas-proven, one well, $850 are all taken. October offers are: 80 or more acres. I drill one well on each, equip for gas, assign lease (Full 7/8) and well for $950 your total cost. 300% year on your money possible. Pipeline market pays 8c per M.

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BLOCK 20,000 ac. Mont. wildcat. Good geol. Gas at approx. 2,000, oil 6,000 ft. Unit leases one well validates or 10 cents rental. Market for gas. Will give good deal for immediate action. Address Box J-572. The Oil and Gas Journal, Tulsa, Okla.

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WILL purchase producing lease in eastern Kansas. No brokers. A. L. Harper, 430 East 17th St., Hutchinson, Kansas.

OWNERS, Brokers and buyers of bargains in Oil production, Leases, Royalties and Lands. I have many buyers and many bargains, and need many more for my clients. Am not a broker. See or write E. B. Reeves, Box 13, Alanreed, Gray Co., Texas.

N. MEX. Landowners Royalty, Lea County 1/32nd mineral deed, $50 full price T. P. Coal & Oil Co. 160 acre lease. Roy G. Barton, Hobbs, New Mexico.

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GRADUATE Petroleum Engineer with 20 years' experience as Drilling and Production Superintendent in Mid-Continent and Gulf Coast areas, 42 years old, Single. Now employed. Good reason for desiring change. Sober. Good habits. Good character. Excellent references. Address Box J-560, The Oil and Gas Journal, Tulsa, Oklahoma.

ENGINEER, 28, single, good health, 4 years' surveying experience, wishes position with oil company, preferably in South America, but will go anywhere. Address Box J-570, The Oil and Gas Journal, Tulsa, Oklahoma.

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This space may be contracted for over a period of one year from the date of the first insertion and is PAYABLE IN ADVANCE, MONTHLY.

CLASSIFIED

Classified advertising rates: First insertion, 35 cents a line; each additional insertion, 25 cents a line, PAYABLE IN ADVANCE. Six words usually make a line. Count as a word each one-letter word and each group of figures. White-space computed at regular line rate. Allow two extra lines for blind ads. Ads of less than three lines not accepted. No formal acknowledgement is made, and proofs cannot be shown in advance of publication.

	1 time	2 times	3 times	4 times		1 time	2 times	3 times	4 times
3 Lines	*$1.05*	*$1.80*	*$2.55*	*$3.30*	*7 Lines*	*$2.45*	*$4.20*	*$5.95*	*$7.70*
4 Lines	*1.40*	*2.40*	*3.40*	*4.40*	*8 Lines*	*2.80*	*4.80*	*6.80*	*8.80*
5 Lines	*1.75*	*3.00*	*4.25*	*5.50*	*9 Lines*	*3.15*	*5.40*	*7.65*	*9.90*
5 Lines	*1.75*	*3.00*	*4.25*	*5.50*	*10 Lines*	*3.50*	*6.00*	*8.50*	*11.00*

We reserve the right to withhold all advertising of questionable character. To avoid delay be sure to send remittance with copy. We will set your ad in the smallest amount of space possible and refund all overpayments. One-time insertions will not be run until fully paid. Forms close MONDAY NOON before each issue date.

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma